

## **“ENTSO-E Research, Development & Innovation Implementation Plan 2026-2030” - Treatment of received comments in Public Consultation 21.04.2026- 22.05.2026**

From: ENTSO-E Research, Development & Innovation Committee (RDIC) under leadership of Working Group Research, Development & Innovation Planning (WG RDIP)

---

# Public Consultation Feedback Report

Final | 7 July 2026

European Network of  
Transmission System Operators  
for Electricity



## SUMMARY

The objective of this document is to collect all received comments and questions received by the ENTSO-E during Public Consultations period, opened from 21 April 2026 to 22 May 2026, regarding the “ENTSO-E Research, Development & Innovation Implementation Plan 2026-2030”.

All received comments, have been treated, analysed and responded to based on an expert opinion of the ENTSO-E Working Group Research, Development & Innovation Planning (WG RDIP), under the ENTSO-E Research, Development & Innovation Committee (RDIC).

# Public Consultation Feedback Report

Final | 7 July 2026

European Network of  
Transmission System Operators  
for Electricity



## RECEIVED COMMENTS AND RESPONSES

| No. | PC or PW | Internal ref. | Entity submitting comment | Comment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | ENTSO-E Innovation, Working Group RDIP feedback - Final |
|-----|----------|---------------|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|
| 1   | PC       | 1.OB0         | Independent Consultant    | <p>Dear ENTSO-E RDI Committee,</p> <p>Please find attached my detailed feedback on the draft Research, Development and Innovation Implementation Plan 2026–2030. The response is offered from the perspective of a protection and control engineer with over 25 years of EHV transmission experience, and focuses on nine areas (which are very often highlighted by experts) where I believe the Plan could be further strengthened: transparency of inverter-based resource models, standardisation of EMT-domain models, open-source study software to widen the research base, a framework for real-time disturbance data sharing, stronger inclusion of field-level professionals, globally accepted benchmark systems for IBR-dominated grids, pilot demonstrations of grid-forming inverters, harmonised converter regulatory requirements, strategic deployment of synchronous devices, and WAMS-based adaptive load shedding.</p> <p>The recommendations are intended to complement rather than redirect the Plan, particularly in support of resilience under low-inertia and converter-dominated conditions. I would be pleased to expand on any point should the Committee find it useful.</p> <p>With kind regards,</p> | Thank you for your comments.                            |

# Public Consultation Feedback Report

Final | 7 July 2026

|   |    |       |                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                          |
|---|----|-------|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2 | PC | 1.OB1 | Independent Consultant | <p>First concern: transparency of inverter-based resource (IBR) models</p> <p>The current practice of treating OEM control structures as black boxes creates a persistent gap between system studies and actual field behaviour, particularly during faults and weak-grid events.</p> <p>I would encourage ENTSO-E to define minimum transparency requirements covering control structure, fault response, and protection interaction, and to consider a tiered disclosure framework that balances legitimate commercial confidentiality with the security needs of the interconnected system.</p> <p>Alongside this, there is a strong case for validated and standardised EMT-domain models of IBRs and HVDC converters being integrated into widely used tools such as PSCAD and EMTP-RV, and certified for transient stability, fault response, and both grid-forming and grid-following modes of operation.</p> <p>Without this, hybrid AC/DC studies across TSOs will continue to produce inconsistent results.</p> <p>Related to this, I would strongly encourage the Plan to give explicit support to open-source power system study software. Commercial tool licences are a real barrier for universities, smaller research groups, and independent experts, and the most persistent grey areas in IBR dominated system behaviour - sub-synchronous control interactions, unconventional protection misoperations, and control-hardware-in-the-loop validation - are precisely the topics where a wider and more diverse pool of researchers is needed.</p> <p>Investment in, and institutional endorsement of, open-source platforms would expand the research base considerably.</p> <p>Publishing validated ENTSO-E reference network models in open, tool-agnostic formats under permissive licences would also allow findings from academic and industry research to be compared on a common basis, which today is rarely possible.</p> | <p>This topic is covered by the "Standardization of Simulation Tool Interfaces" roadmap milestone and by PC5 within the Implementation Plan.</p> <p>Model standardization, and therefore transparency, is an important element of validation and the basis for independent research.</p> |
|---|----|-------|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# Public Consultation Feedback Report

Final | 7 July 2026

|   |    |       |                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|---|----|-------|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3 | PC | 1.OB2 | Independent Consultant | <p>Need for a secure and controlled framework for sharing real-time disturbance and transient data.</p> <p>Access at expert-committee level to fault recordings, converter dynamic responses, and protection system behaviour would materially support model validation, digital twin development, and the AI-based system analysis that the Plan envisages.</p> <p>In the same spirit, I would encourage broader inclusion of field-level professionals - system operators, protection engineers, and commissioning engineers - in the RDI and standardisation committees. The disconnect between analytical models and observed system behaviour is, in my experience, most effectively narrowed by the people who see that behaviour first-hand.</p>                                                                                                                                                                                                                           | This topic is covered by PC9.                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 4 | PC | 1.OB3 | Independent Consultant | <p>On the research infrastructure side, the development of globally accepted benchmark test systems for IBR-dominated grids would be a valuable contribution.</p> <p>Enhanced versions of the IEEE 14-bus and 39-bus systems, incorporating high IBR penetration, HVDC integration, and modern control models, would support reproducible research and cross-border collaboration in a way that ad-hoc academic networks currently cannot.</p> <p>Ideally these benchmarks should be released in open, tool-agnostic formats so that the open-source ecosystem noted above can consume them directly.</p> <p>Pilot-scale and utility-scale demonstrations of grid-forming inverters also deserve stronger emphasis in the Plan - specifically to evaluate black-start capability, weak-grid performance, and fault behaviour under realistic conditions. Findings from such demonstrations should feed directly into refinement of OEM control strategies and into grid code.</p> | <p>This topic is covered by the RDI Roadmap's milestones "Standardization of simulation tool interfaces" and "Development of GFM demonstrators," as well as by PC5 and PC6 within the Implementation Plan.</p> <p>Model standardization, including the availability of models for simulation tools (including open source), allows for comparative research. The development of demonstrators is intended to enhance the system's operational safety.</p> |

# Public Consultation Feedback Report

Final | 7 July 2026

|   |    |       |                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                          |
|---|----|-------|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5 | PC | 1.OB4 | Independent Consultant | <p>From a regulatory and protection standpoint, I would encourage ENTSO-E to push for harmonised and more stringent technical requirements on converter-based systems, covering fault current contribution, voltage and frequency support, and coordination with conventional protection schemes.</p> <p>The current variability in converter fault response is already a significant challenge for distance and differential protection in converter-rich corridors, and this will only intensify as penetration rises. Complementing this, the strategic deployment of synchronous condensers and hybrid solutions should be treated as a core system-support measure rather than a transitional one, given their demonstrated role in maintaining short-circuit strength, voltage stability, and system integrity during severe disturbances.</p> | <p>This topic is covered by the roadmap milestones "Standardization of simulation tool interfaces" and "Stability margins measurement and assessment for PEID-dominated systems," as well as the PC6 benchmark within the implementation plan. Validation and implementation of common model standards lead to clear guidelines on technical capabilities, system performance, and new market rules.</p> |
| 6 | PC | 1.OB5 | Independent Consultant | <p>I would strongly support the development of area-based adaptive load-shedding schemes built on WAMS infrastructure.</p> <p>Wide-area, PMU-driven schemes that coordinate regionally and respond in the sub-second range will be essential for resilience in low-inertia, converter-dominated conditions, and represent a natural extension of the digitalisation themes already in the Plan</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <p>This suggestion has been incorporated into PC9 "Scope" text.</p>                                                                                                                                                                                                                                                                                                                                      |
| 7 | PC | 2.OB1 | Vattenfall             | <p>Hi, My feedback is that there should be R&amp;D and innovation projects concerning the fast introduction of large loads such as Datacenter/AI/ML and how they impact the grid/stability/other power production units(SGU) with such as forced oscillations and eventually harmful subsynchronous torsional interactions to turbine strings of synchronous generation. Please look at the NERC large load study for input.</p>                                                                                                                                                                                                                                                                                                                                                                                                                     | <p>Comment on data centers have been incorporated into PC 5, "Needs addressed".</p>                                                                                                                                                                                                                                                                                                                      |

# Public Consultation Feedback Report

Final | 7 July 2026

|   |    |       |                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---|----|-------|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8 | PC | 3.OB1 | SERGI<br>Transformer<br>Protector<br>SAS | <p>We welcome the overall structure of the ENTSO-E RDI Implementation Plan 2026–2030 and its focus on supply-chain resilience, AI-based decision support, digital twins, interoperability, cyber resilience and extreme-event preparedness. The proposed Project Concepts provide a strong basis for coordinated TSO-led innovation.</p> <p>We recommend, however, that the final Implementation Plan makes more explicit one cross-cutting dimension of resilience: the physical consequence-limitation of critical grid assets, especially power transformers, HVDC converter transformers, generator step-up transformers and highly critical substation transformers.</p> <p>Today, grid resilience is often framed around detection, observability, control-room support, spare strategies, restoration and cybersecurity. These are essential. Yet for certain critical assets, the decisive resilience question is also whether an internal fault, external attack, cyber-enabled operational disturbance or extreme-event sequence can escalate into irreversible asset loss, tank rupture, fire, environmental damage, collateral substation damage and long-duration supply disruption.</p> <p>We therefore recommend adding either a dedicated Project Concept or a formal cross-cutting workstream under PC1, PC7, PC8 and PC9: “Critical Transformer and Cyber-Physical Resilience: asset criticality, physical consequence-limitation and restoration readiness.”</p> <p>This workstream could include the following deliverables:</p> <ol style="list-style-type: none"> <li>1. Pan-European criticality and resilience taxonomy for power transformers<br/>Develop a common TSO methodology to classify transformers not only by voltage, rating and age, but also by systemic criticality, substitutability, lead time, urban or confined location, HVDC/GSU role, data-centre or industrial dependency, environmental exposure and restoration complexity.</li> <li>2. Transformer physical resilience index integrated into asset management<br/>Extend asset health indices beyond condition monitoring and lifetime assessment to include physical consequence indicators: internal arc exposure,</li> </ol> | <p>This comment has been incorporated into text of the PC8:</p> <p><b>Suggestion 1. New "Scope" bullet point added at the end.</b><br/>"Limiting the physical escalation of severe internal faults on high-criticality grid assets (in particular, large power transformers, HVDC converter transformers, generator step-up transformers, and strategic substation transformers) and integrating asset-level consequence indicators (e.g., tank rupture, fire, oil release, collateral substation damage, restoration complexity) into resilience planning and operational scenarios."</p> <p><b>Suggestion 2. New "Expected outcome" bullet point added at the end.</b><br/>"Asset-level consequence models for high-criticality grid assets, enabling TSOs to weigh physical-resilience and restoration-readiness</p> |
|---|----|-------|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

tank rupture mitigation, fire propagation risk, oil containment, bushing turret/cable-box vulnerability, OLTC configuration, protection clearing time, site constraints and adjacent-asset exposure.

### 3. Cyber-physical scenario modelling

Treat cyber risk not only as a digital control-room or data-integrity issue, but also as a possible creator or amplifier of hazardous operating conditions: loss of visibility, delayed isolation, malicious switching sequences, protection-setting manipulation, OT access compromise, recovery delay or degraded emergency response. The objective is not to overstate cyber causality, but to model how digital compromise can reduce the time available to prevent or contain physical damage.

### 4. Integration into grid digital twins and AI decision support

Digital twins should not only represent electrical states and dynamic security margins; they should also include asset-level consequence models. For high-criticality transformers, operators and planners should be able to evaluate not only “which overload or contingency occurs?”, but also “what happens if this asset is lost for months?”, “what collateral damage could occur?”, “what restoration path exists?”, and “which physical mitigation layer changes the consequence profile?”.

### 5. Standardised verification and testing approaches

ENTSO-E should encourage collaboration with CIGRE, IEEE, IEC, manufacturers, TSOs, insurers and independent laboratories to harmonise methods for assessing tank rupture mitigation, internal arc consequence limitation, fire-risk reduction and site-level resilience. This should cover both new-build and retrofit applications, including main tanks, bushings turrets, OLTC compartments, cable boxes, conservators, oil containment and confined/urban installations.

### 6. Multi-TSO demonstrators

Launch demonstrators across representative use cases:

- an urban or indoor substation with high public-safety exposure;
- a GSU or HVDC converter transformer with high system criticality;
- a transformer supplying a high-density load node such as data centres, industrial electrification or hydrogen hubs;
- a climate-exposed or wildfire/flood-prone substation.

### 7. Procurement and regulatory integration

Shift the evaluation of transformer resilience from lowest equipment cost to

measures alongside electrical security margins."



total system-risk value. Procurement should integrate design review, factory qualification, FAT/SAT discipline, supplier-risk assessment, strategic spares, repairability, mutual assistance, insurance/risk-engineering inputs and lifecycle consequence reduction.

Expected outcomes would include:

- a common European transformer criticality and resilience framework;
- harmonised asset-level consequence metrics;
- digital-twin modules linking asset failure to system impact and restoration time;
- practical guidance for new-build and retrofit resilience requirements;
- test and verification protocols aligned with IEEE/CIGRE/IEC work;
- demonstrators moving asset-level physical resilience solutions toward higher TRL;
- improved prioritisation of investments where asset loss would create systemic consequences.

This addition would strengthen the Implementation Plan by connecting supply-chain resilience, cyber resilience, AI, digital twins and extreme-event preparedness to the physical reality of critical assets. It would also support ENTSO-E's objective of ensuring a secure, affordable and resilient European power system by reducing the probability that a single asset failure becomes a long-duration system, environmental, financial or societal event.

# Public Consultation Feedback Report

Final | 7 July 2026

|   |    |       |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                             |
|---|----|-------|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 9 | PC | 4.OBO | Enoda LTD | <p>ENODA welcomes the draft ENTSO-E Research, Development and Innovation Implementation Plan 2026-2030, and we are supportive of the overall direction in using innovations and novel technologies to develop the electricity network and address upcoming challenges posed by renewables and mass electrification.</p> <p>We agree with several of the defining features of the future electricity system identified in the plan: the growing role of inverter-based and power-electronic resources, the need for stronger digitalisation and interoperability, the importance of grid-forming capability, the value of digital twins and advanced observability, and the centrality of coordinated flexibility across system levels. The emphasis on translating the Roadmap into concrete project concepts and raising innovation towards higher technology readiness levels is especially positive. Too often new technologies can be stuck within innovation programmes and ‘death-by-pilot’. Therefore from ENODA’s perspective, this is the right broad framework for a more dynamic, resilient and decarbonised electricity system.</p> <p>However, we believe the draft would be strengthened by giving more explicit recognition to innovation at the distribution node as an enabler of transmission-level outcomes. As drafted, the Plan is understandably transmission-led, given ENTSO-E’s focus. However, many of the challenges it identifies, including stability in power-electronics-dominated systems, better flexibility activation, improved observability, and more effective operational coordination, will not be solved by transmission-layer tools and market interfaces alone. They will also depend on deployable, controllable technologies located at lower voltage levels, particularly at distribution substations where real-time physical conditions can be measured and actively shaped.</p> <p>This point is particularly relevant to the draft’s treatment of grid-forming capability. ENTSO-E is right to identify grid-forming capability as critical in power-electronics-dominated systems, to call for demonstrations in relevant operational environments, and request harmonised requirements and standards. We agree with that priority. Our suggestion is that the Plan could adopt a slightly broader operational lens when considering which technologies can contribute to this future system architecture. In practice, future system stability will rely not</p> | <p>Thank you for your submission and comments. To best treat your input, we have split your submission into several comments and tackled each one. Further information with our response in rows below.</p> |
|---|----|-------|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

only on transmission-connected assets, but also on controllable technologies at the distribution level that can improve local electrical conditions, support more stable power exchange, and reduce the propagation of power-quality and voltage issues upstream. Whilst we recognise that ENTSO-E will be transmission focused, acknowledging the role of the distribution network would make the Plan's own system-stability agenda more complete and more implementable. Furthermore, we think that it is important to be technology agnostic about grid forming capability, as both purely power electronics solutions, like inverters and solid state transformers, and active electromagnetic devices, like ENODA Prime Exchangers, can provide grid forming capability.

A similar point applies to Project Concept 9 on grid digital twins for enhanced real-time observability. We strongly support the ambition to combine high-fidelity models with real-time data and to improve representation of power-electronic devices on both the transmission and distribution level. However, the value of digital twins will be greatest when they are linked not only to better visibility, but also to controllable field assets that can execute corrective actions locally and in real time. The next phase of grid digitalisation should be conceived not only as improved modelling and observability, but as a coherent network architecture in which grid assets provide granular operational data and can respond dynamically to system needs. We would therefore encourage ENTSO-E to make the link between digital twins, real-time control and field-deployable hardware more explicit.

From ENODA's perspective, Project Concept 10 on automated DER flexibility services is another area where this broader framing would add value. We welcome the Plan's strong focus on TSO-DSO coordination, interoperable data exchange, vendor-agnostic solutions, and practical demonstration of coordination schemes in real-world settings. Those are essential for future flexibility markets and ancillary-service participation at all levels of the system. However, the effectiveness of those frameworks will also depend on the physical capability of the underlying distribution network. Flexibility services can only scale where networks are observable, controllable and resilient, and where local constraints such as voltage deviations, harmonics, reactive power behaviour, or phase imbalance do not undermine service delivery. For that reason, flexibility

market design and distribution hardware modernisation should be seen as complementary, innovation tracks.

This is where we see a gap in the draft. The Plan is strong on software, coordination, data exchange and high-level system architectures, but it gives less attention to integrated hardware-software solutions that can act directly on network conditions. This matters because the future grid cannot be managed successfully by software alone. It will require secure, controllable grid assets that are tightly integrated with edge computing, operator interfaces, monitoring systems and coordination layers. This kind of integrated architecture can provide both local and system-wide benefits: improved voltage behaviour, better reactive power performance, harmonic mitigation, enhanced power quality, and greater ability to support balancing and operational resilience across the wider system. ENTSO-E's stated objectives would therefore benefit from a clearer recognition of such integrated technology pathways.

ENODA's own experience is that the distribution substation is increasingly a strategic point of intervention for system-wide value. Our Prime Exchanger platform is designed as a drop-in substation technology that can regulate voltage, control power factor, suppress harmonics, balance phases, enable bidirectional power flow and generate detailed network data in a single integrated system. Combined with our software offerings Nodal Asset Management and ENSEMBLE, it also supports real-time visibility, control and coordination across a fleet of assets. This illustrates a broader category of innovation that the ENTSO-E Plan could capture more explicitly: technologies that combine physical assets, software and cyber-secure communications to turn previously passive points on the network into active system assets.

We would therefore encourage ENTSO-E to refine the draft in three specific ways. First, the final Plan should more clearly state that transmission-level objectives such as stability, flexibility, observability and resilience increasingly depend on technologies deployed at the transmission-distribution interface, or on even lower-voltage distribution networks. Second, where the draft refers to digitalisation, interoperability and AI-enabled operations, it should place greater emphasis on integrated hardware-software innovation rather than implicitly

# Public Consultation Feedback Report

Final | 7 July 2026

|    |    |       |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                 |
|----|----|-------|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
|    |    |       |           | <p>treating software and communications layers as sufficient on their own. Third, the final Plan should encourage demonstrators that involve TSOs and DSOs collaborating to support innovation with wider system benefits. These changes would not dilute the TSO emphasis of the Plan; they would strengthen its ability to deliver TSO priorities in a system that is becoming more distributed and more operationally interdependent across voltage levels.</p> <p>More broadly, we think the draft is right to focus on collaboration and implementation. Our recommendation is not to shift the Plan away from its transmission focus, but to sharpen the delivery priorities. If ENTSO-E wants the future European power system to be more flexible, resilient and interoperable, then the Implementation Plan should reflect not only how TSOs coordinate with other actors, but also what new categories of field-deployable technology will be needed across the network to enhance that cooperation.</p> <p>ENODA would be pleased to engage further with ENTSO-E and relevant stakeholders on how integrated substation-level hardware and software can contribute to these aims, particularly in the areas of power-electronics-dominated system operation, TSO-DSO coordination, digital twins, and real-world innovation demonstrators.</p> |                                 |
| 10 | PC | 4.OB1 | Enoda LTD | <p>The draft would be strengthened by giving more explicit recognition to innovation at the distribution node as an enabler of transmission-level outcomes.</p> <p>As drafted, the Plan is understandably transmission-led, given ENTSO-E's focus. However, many of the challenges it identifies, including stability in power-electronics-dominated systems, better flexibility activation, improved observability, and more effective operational coordination, will not be solved by transmission-layer tools and market interfaces alone. They will also depend on deployable, controllable technologies located at lower voltage levels, particularly at distribution substations where real-time physical conditions can be measured and actively shaped.</p> <p>This point is particularly relevant to the draft's treatment of grid-forming capability. ENTSO-E is right to identify grid-forming capability as critical in power-electronics-dominated systems, to call for demonstrations in relevant operational environments, and request harmonised requirements and standards.</p>                                                                                                                                                                                                                                                          | Already covered by PC6 "Scope". |

# Public Consultation Feedback Report

Final | 7 July 2026

|    |    |       |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                            |
|----|----|-------|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|
|    |    |       |           | <p>We agree with that priority. Our suggestion is that the Plan could adopt a slightly broader operational lens when considering which technologies can contribute to this future system architecture. In practice, future system stability will rely not only on transmission-connected assets, but also on controllable technologies at the distribution level that can improve local electrical conditions, support more stable power exchange, and reduce the propagation of power-quality and voltage issues upstream. Whilst we recognise that ENTSO-E will be transmission focused, acknowledging the role of the distribution network would make the Plan's own system-stability agenda more complete and more implementable. Furthermore, we think that it is important to be technology agnostic about grid forming capability, as both purely power electronics solutions, like inverters and solid state transformers, and active electromagnetic devices, like ENODA Prime Exchangers, can provide grid forming capability.</p> |                                                                            |
| 11 | PC | 4.OB2 | Enoda LTD | <p>A similar point applies to Project Concept 9 on grid digital twins for enhanced real-time observability. We strongly support the ambition to combine high-fidelity models with real-time data and to improve representation of power-electronic devices on both the transmission and distribution level. However, the value of digital twins will be greatest when they are linked not only to better visibility, but also to controllable field assets that can execute corrective actions locally and in real time. The next phase of grid digitalisation should be conceived not only as improved modelling and observability, but as a coherent network architecture in which grid assets provide granular operational data and can respond dynamically to system needs. We would therefore encourage ENTSO-E to make the link between digital twins, real-time control and field-deployable hardware more explicit.</p>                                                                                                              | Text of the PC9 "Expected outcome" extended as a response to this comment. |
| 12 | PC | 4.OB3 | Enoda LTD | <p>Project Concept 10 on automated DER flexibility services is another area where this broader framing would add value. We welcome the Plan's strong focus on TSO-DSO coordination, interoperable data exchange, vendor-agnostic solutions, and practical demonstration of coordination schemes in real-world settings. Those are essential for future flexibility markets and ancillary-service participation at all levels of the system. However, the effectiveness of those frameworks will also depend on the physical capability of the underlying distribution network. Flexibility services can only scale where networks are observable, controllable and resilient, and where local constraints such as voltage deviations, harmonics, reactive power behaviour, or</p>                                                                                                                                                                                                                                                            | Already covered by PC10.                                                   |

# Public Consultation Feedback Report

Final | 7 July 2026

|    |    |       |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                    |
|----|----|-------|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|
|    |    |       |           | phase imbalance do not undermine service delivery. For that reason, flexibility market design and distribution hardware modernisation should be seen as complementary, innovation tracks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                    |
| 13 | PC | 4.OB4 | Enoda LTD | <p>The Plan is strong on software, coordination, data exchange and high-level system architectures, but it gives less attention to integrated hardware-software solutions that can act directly on network conditions. This matters because the future grid cannot be managed successfully by software alone. It will require secure, controllable grid assets that are tightly integrated with edge computing, operator interfaces, monitoring systems and coordination layers. This kind of integrated architecture can provide both local and system-wide benefits: improved voltage behaviour, better reactive power performance, harmonic mitigation, enhanced power quality, and greater ability to support balancing and operational resilience across the wider system. ENTSO-E's stated objectives would therefore benefit from a clearer recognition of such integrated technology pathways.</p> | Text of the PC9 "Scope" extended as a response to this comment.    |
| 14 | PC | 4.OB5 | Enoda LTD | <p>ENODA's own experience is that the distribution substation is increasingly a strategic point of intervention for system-wide value. Our Prime Exchanger platform is designed as a drop-in substation technology that can regulate voltage, control power factor, suppress harmonics, balance phases, enable bidirectional power flow and generate detailed network data in a single integrated system. Combined with our software offerings Nodal Asset Management and ENSEMBLE, it also supports real-time visibility, control and coordination across a fleet of assets. This illustrates a broader category of innovation that the ENTSO-E Plan could capture more explicitly: technologies that combine physical assets, software and cyber-secure communications to turn previously passive points on the network into active system assets.</p>                                                   | Text of the PC9 "Barriers" extended as a response to this comment. |

# Public Consultation Feedback Report

Final | 7 July 2026

|    |    |       |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                   |
|----|----|-------|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| 15 | PC | 4.OB6 | Enoda LTD | <p>We would therefore encourage ENTSO-E to refine the draft in three specific ways.</p> <p>First, the final Plan should more clearly state that transmission-level objectives such as stability, flexibility, observability and resilience increasingly depend on technologies deployed at the transmission-distribution interface, or on even lower-voltage distribution networks.</p> <p>Second, where the draft refers to digitalisation, interoperability and AI-enabled operations, it should place greater emphasis on integrated hardware-software innovation rather than implicitly treating software and communications layers as sufficient on their own.</p> <p>Third, the final Plan should encourage demonstrators that involve TSOs and DSOs collaborating to support innovation with wider system benefits.</p> <p>These changes would not dilute the TSO emphasis of the Plan; they would strengthen its ability to deliver TSO priorities in a system that is becoming more distributed and more operationally interdependent across voltage levels.</p> <p>More broadly, we think the draft is right to focus on collaboration and implementation. Our recommendation is not to shift the Plan away from its transmission focus, but to sharpen the delivery priorities.</p> <p>If ENTSO-E wants the future European power system to be more flexible, resilient and interoperable, then the Implementation Plan should reflect not only how TSOs coordinate with other actors, but also what new categories of field-deployable technology will be needed across the network to enhance that cooperation.</p> | <p>Text of the PC9 "Expected outcome" extended as a response to this comment.</p> |
| 16 | PC |       | ENNOH     | <p>ENNOH would be glad to further discuss with ENTSO-E in order to foster close and fruitful cooperation and establish the integrated European system we all desire.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <p>Thank you for your comments.</p>                                               |



# Public Consultation Feedback Report

Final | 7 July 2026

|    |    |       |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                   |
|----|----|-------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 17 | PC | 5.OB1 | ENNOH       | <p>Project Concept 12, “Hydrogen hub: Enhancing grid resilience and flexibility through sector coupling”, is of particular interest to ENNOH. It is an area for close and strong cooperation between ENNOH and ENTSO-E. In fact, ENNOH can provide relevant inputs to different aspects covered by this Project Concept, such as:</p> <ul style="list-style-type: none"> <li>- developing new business models to support system security and adequacy,</li> <li>- evaluating long-duration hydrogen storage potential and its associated benefits,</li> <li>- reinforcing the role of hydrogen alongside other technologies in providing a reliable and low-carbon source of energy to consumers, via both hydrogen and electricity grids, as well as</li> <li>- Implementing cross-sector planning covering storage, hydrogen, heating and cooling, and transportation, to ensure a coordinated approach to energy resilience, are expected outcomes.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <p>We acknowledge and take into account the cooperation proposal made by ENNOH for PC 12 and other future implications in Roadmap Mission 6 topics in the future as required.</p> |
| 18 | PW | 6.OB0 | LiveEO GmbH | <p>LiveEO welcomes the publication of the ENTSO-E RDI Implementation Plan 2026–2030 and the opportunity to contribute to its public consultation. We focus our response on Project Concept 8 (PC08), where we believe targeted additions to the text would strengthen its technical scope and accelerate delivery against the stated milestones.</p> <p>LiveEO is a Berlin-based Earth Observation (EO) technology company providing AI-powered satellite monitoring of critical infrastructure. Our products include Treeline, which monitors vegetation risk and wildfire exposure along powerline corridors, and SurfaceScout, which detects man-made and natural changes along infrastructure corridors. Both of these systems draw on a virtual constellation of 300+ Earth Observation (EO) satellites in orbit and we monitor over one million kilometres of grid infrastructure globally.</p> <p>Despite an increasing number of launches of Earth Observation satellites and the increased supply of data these provide, capacity in the market is being reduced due to geopolitics and the heightened security environment. LiveEO is therefore launching the Twinspector constellation in 2028. This constellation will provide domestic Earth Observation capability in Europe. It is the first constellation to be designed for monitoring electrical powerlines and will be the largest commercial 3D camera in space.</p> | <p>Thank you for your comments.</p>                                                                                                                                               |

# Public Consultation Feedback Report

Final | 7 July 2026

|    |    |       |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                    |
|----|----|-------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| 19 | PW | 6.OB1 | LiveEO GmbH | <p>The case for naming satellite Earth Observation explicitly in PC08</p> <p>The PC08 text correctly identifies extreme weather events, wildfires, storms, floods, heatwaves, and the need for advanced forecasting and real-time situational awareness as central challenges. The document also cites the NATUREYE project (multispectral cameras on VHV towers for rural fire detection) as representative of the current state of the art. We commend this reference: it confirms that remote sensing is already an accepted tool for extreme event management in transmission system operations.</p> <p>However, the current text stops short of recognising satellite Earth Observation as a scalable complement to tower-mounted sensors. The distinction matters: ground-based sensors provide high-resolution point data; satellite EO provides continental-scale coverage, repeated systematically, independent of ground-access constraints. For the pan-European resilience ambitions articulated in PC08, including cross-border coordination and the monitoring of interconnected transmission corridors, this distinction is operationally significant. We therefore recommend that ENTSO-E explicitly reference satellite and Earth Observation data as a recognised input category within PC08, alongside the existing references to AI/ML analytics and sensor networks. This is not a departure from the plan's intent, it is a logical extension of what the NATUREYE reference already implies.</p> | <p>In order to address this comment changes have been made to text of the PC8 (Scope, State of the art, Barriers, and Expected collaboration).</p> |
| 20 | PW | 6.OB2 | LiveEO GmbH | <p>Proposed additions to the PC08 text</p> <p>We propose three targeted additions to the PC08 description. These are presented below as recommended insertions to the existing text, with the rationale for each.</p> <p>2a. Scope section — predictive analytics paragraph</p> <p>Current text: "Implementing predictive analytics based on AI and machine learning (ML) to investigate system vulnerabilities in extreme weather events and security threats."</p> <p>Proposed addition: Append "This includes the integration of satellite and Earth Observation (EO) data as a wide-area, scalable input layer for vegetation risk modelling, wildfire propagation forecasting, and the detection of ground deformation or third-party interference along corridors."</p> <p>Rationale: Satellite EO uniquely provides the spatial breadth required for pan-European risk monitoring. It directly addresses the barrier noted in PC08, "access</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <p>Text of the PC8 "Scope" (bullet point 4) extended as a response to this comment.</p>                                                            |

# Public Consultation Feedback Report

Final | 7 July 2026

|    |    |       |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                        |
|----|----|-------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
|    |    |       |             | to high-quality data", by offering systematic, repeatable, area-wide observation at a cost and scale unachievable by ground sensors alone.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                        |
| 21 | PW | 6.OB3 | LiveEO GmbH | <p>Proposed additions to the PC08 text</p> <p>We propose three targeted additions to the PC08 description. These are presented below as recommended insertions to the existing text, with the rationale for each.</p> <p>2b. State of the art section</p> <p>Current text: Cites NATUREYE (multispectral cameras on VHV towers) and Ukrenergo's physical resilience programme as the principal state-of-the-art references.</p> <p>Proposed addition: Add a further reference, "Satellite-based Earth Observation platforms are increasingly used by European, North American and Australasian TSOs for wide-area vegetation monitoring, wildfire risk assessment, and corridor surveillance. High-resolution 3D satellite constellations purpose-built for infrastructure monitoring now offer repeatable sub-metre resolution across transmission networks, providing a scalable complement to tower-mounted sensing."</p> <p>Rationale: The state-of-the-art section should reflect the full range of available technology. Omitting satellite EO creates a gap between the document and operational practice.</p> | To respond to this comment, an additional paragraph has been added to the PC8 "State of the art" section (at the end). |

# Public Consultation Feedback Report

Final | 7 July 2026

|    |    |       |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                       |
|----|----|-------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| 22 | PW | 6.OB4 | LiveEO GmbH | <p>Proposed additions to the PC08 text</p> <p>We propose three targeted additions to the PC08 description. These are presented below as recommended insertions to the existing text, with the rationale for each.</p> <p>2c. Barriers section — data access</p> <p>Current text: Lists "access to high-quality data and protocols, enabling precise predictive analysis" as a key barrier.</p> <p>Proposed addition: Append "Satellite and EO-derived datasets, including vegetation indices, wildfire relevant metrics, and terrain deformation metrics, represent an available and rapidly maturing data class that can partially address this barrier for wide-area risk assessment. Projects implementing this PC should be encouraged to assess EO data integration as part of their data architecture."</p> <p>Rationale: Naming EO as a potential solution to the data access barrier signals to future project proposers that this data class should be considered. Without this signal, project teams may default to ground-sensor-only architectures that limit geographic coverage.</p> | Text of the PC8 "Barrier" (2nd bullet point) extended as a response to this comment.  |
| 23 | PW | 6.OB5 | LiveEO GmbH | <p>3. Expected collaboration and LiveEO's offer of contribution</p> <p>PC08 identifies DSOs, energy service providers, authorities, and end users as expected collaboration partners. We recommend that the list be broadened to include Earth Observation and remote sensing technology providers, as these represent a distinct and increasingly important category in extreme event preparedness.</p> <p>LiveEO is prepared to contribute to the working group process in the following ways:</p> <ul style="list-style-type: none"> <li>• Provide a technical case study demonstrating satellite EO integration along HV transmission corridors</li> <li>• Share performance benchmarks for wide-area vegetation monitoring or third party activity monitoring relevant to the PC08 scope.</li> </ul>                                                                                                                                                                                                                                                                                          | Text of the PC8 "Expected collaboration with" extended as a response to this comment. |

# Public Consultation Feedback Report

European Network of  
Transmission System Operators  
for Electricity



Final | 7 July 2026

- Participate as a technology partner in pilot or demonstrator projects launched under PC08, in collaboration with interested TSO members.
- Provide access to Twinspector imagery capabilities for proof-of-concept testing in relevant operational environments.

## *Legend:*

*PC - Public Consultation; PW - Public Webinar within Public Consultation*

*X.OBX – letters “OB” stand for “Observation”*