TRANSPOWER

System Operator's Participants' Forum

12 November 2026

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TSO–DSO coordination: Operational requirements

Participants Forum 2026 – morning session: reflecting on the paper and your feedback

Thursday 12 November 2026 | Wellington

Our morning together

- 10:00 Why we wrote the paper, and our guiding principles
- 10:10 Five requirements: what we said, what you said
- 10:35 The five priority use cases, then coffee at 10:45
- 11:00 Table exercise: flesh out your use case (60 mins)
- 12:00 Table playback, wrap-up and next steps
- 12:30 Lunch

Why we wrote the paper

The system is becoming more distributed, dynamic and data-dependent

Supports System Operator Strategy priority 4 (data and DER) and priority 5 (industry resilience)

Common foundations now help avoid fragmented approaches later

We see operational use cases emerging today for the System Operator



How this aligns with the Authority's DSO roadmap

Authority roadmap

- **Keeps the future TSO–DSO model open**.
- **Prioritises DSO capability**, flexibility markets, visibility, interoperability and safeguards.
- **Encourages industry-led initiatives and pilots**, with progress assessed from 2027.

Our operational work

- **Adds the transmission and whole-system operational lens**.
- **Defines no-regret foundations**: accountabilities, information, exchange and performance.
- **Tests practical use cases** where activity behind a GXP can affect security, events and restoration.

Aligned and complementary

- **Not an alternative roadmap** and not a competing institutional model.
- **Fills in operational detail** the roadmap covers at a higher level.
- **Turns the roadmap's direction** into proportionate, trial-ready coordination arrangements.
- **Bottom line:** the Authority roadmap provides the direction; our work makes the TSO–DSO operational interface specific enough to define and trial.

No regrets. Whatever TSO–DSO model emerges, these foundations still apply.



Reflecting on the paper and your feedback

Our guiding principles

Start with the need

- **Operational need first**: every requirement supports a defined decision, assessment or action
- **Proportionate to operational consequence**: granularity, timing, assurance and cost match the risk

Source and scale

- **Two-way and source-led**: information flows both ways, from the party best placed to provide it
- **Aggregate where sufficient**: GXP or portfolio data preferred where asset-level data isn't needed

Roll-out and safeguards

- **Scale as required**: introduce where material needs emerge, adopt elsewhere later
- **Secure and resilient**: access, cyber security, privacy, confidentiality and fallback are part of the design

Five no-regret operational requirements

Roles

- **1 Clear operational accountabilities**: roles, decision rights, escalation and coordination for normal, abnormal and emergency conditions

Information

- **2 Minimum static information**: trusted standing information on material resources, network characteristics and expected behaviour
- **3 Minimum dynamic information**: timely information on operational conditions, forecasts, resource availability, actions, outages and constraints

Systems and behaviour

- **4 Interoperable information exchange**: common definitions, identifiers, quality expectations and governed interfaces matched to operational criticality
- **5 Predictable technical performance**: aligned outcome-based expectations and compliance information where behaviour can affect system outcomes

Requirement 1: Clear operational accountabilities

What we said

- Shared understanding of who does what when one network's actions affect the other
- Existing divisions of responsibility can stay as they are initially
- A process to establish primacy where transmission and distribution actions could conflict
- No proposal for the SO to dispatch small distribution-connected resources beyond the Code

What you told us

- **Primacy is the priority:** Cortexo, Counties, Top Energy and Unison/Centralines all raise it
- **Counties:** one published dispatch hierarchy
- **Unison/Centralines:** distributors keep the ability to act immediately for safety
- **Vector, Powerco:** separate visibility, coordination and control
- **Orion:** clearer timing and split of responsibility

Over to you

- Is anything missing from the accountabilities list?
- Where do conflicts over the same resource arise today?
- What should be agreed first?

Requirement 2: Minimum static information

What we said

- Only the minimum that materially improves an identified operational use
- Embedded generation, batteries, large loads, controllable demand, network equivalents, technical performance
- Aggregate by GXP, with asset data where penetration is material
- Agree source, definitions, units, update triggers and quality flags for each dataset

What you told us

- **Name the authoritative source** for each field: Counties, Top Energy, Vector
- **Registry as source** for installed generation and batteries: Orion, Unison/Centralines
- **Controllable demand:** the party with control is the source
- **EDBs should not certify** data they cannot verify: ENA, Powerco
- **Orion:** how often will static data update?

Over to you

- Which static data do you already hold, and in what form?
- Who is best placed to keep it current?
- Is a GXP aggregate enough for your use case?

Requirement 3: Minimum dynamic information

What we said

- Justified where it can change a security assessment, forecast, outage decision or event response
- Example: DER may not perform as expected after an HVDC bi-pole trip
- Distributors also need SO information: GXP forecasts, warnings, grid outages and constraints
- Timing follows the decision it supports; not everything needs real-time telemetry

What you told us

- **Cortexo:** split controllable demand into declared, acknowledged and delivered; delivery is the gap
- **Counties, Vector, Top Energy:** make SO-to-EDB information explicit, including protection scheme state
- **Broad support** for GXP default and real-time as the exception
- **Top Energy:** cover constraints inside distribution networks
- **Orion:** what is meant by emergency demand management?

Over to you

- Where would timing change a decision you make?
- What do you need from the SO, and how quickly?
- Which items could be a schedule or event message, not telemetry?

Requirement 4: Interoperable information exchange

What we said

- Common meaning, and reliable use, of operational information
- A small, governed set of exchange platforms or tools
- Reuse existing channels where fit for purpose: schedules, notices, APIs, portals, ICCP
- Each exchange defines its business object, units, identifiers, timing, quality and fallback

What you told us

- **Strong support** for a small governed set and reuse: Orion, Powerco, Unison/Centralines
- **Cortexo:** flexibility platforms can be in the set; ICCP is beyond most providers
- **Counties:** separate semantics, transport and control protocols
- **Identifier gap:** linking ICP, device, portfolio and GXP (Cortexo, Counties, Vector)

Over to you

- Which existing channels would you reuse?
- What identifiers do you need to link resources?
- Where would an API or portal suit better than ICCP?

Requirement 5: Predictable technical performance

What we said

- A credible expectation of how resources behave in normal operation, disturbances and restoration
- Aligned, outcome-based expectations and evidence where material to system outcomes
- Networks may justify different settings, provided differences are known, justified and modelled

What you told us

- **Counties:** communications conformance alone does not prove ride-through
- **IEGA:** could be read as checking individual Code compliance; please clarify
- **Orion:** overlaps with connection sign-off; is this the right forum?
- **Cortexo:** evidence from real or test events, not declared capability
- **Powerco:** capability in an agreed range can differ from commercial availability

Over to you

- What performance evidence is already collected?
- How do we avoid duplicating connection processes?
- Which behaviours matter most in a disturbance?

Five priority use cases to test the requirements

Forecast and share

- **GXP forecast:** contribution of embedded generation, batteries, large loads and controllable demand to net GXP demand forecasts
- **Relevant System Operator information:** schedules, constraints, warnings and grid-interface states distributors need to avoid conflicting action

During events

- **Controllable load during an event:** available quantity, operator, location, response time, activation status and confirmation
- **Material distribution event:** event threshold, affected GXP, impact, expected duration, updates and restoration state

Disturbances

- **DER behaviour during disturbances:** aggregate capability and evidence needed to model ride-through, protection, AUFLS interaction and restoration
- **Over to you:** which matter most to you operationally?

What you told us on the use cases

- Broad agreement with all five use cases
- Counties, ENA, Cortexo, Orion, Vector and WEL agree or broadly agree
- Ranking differs by readiness and by operational need

New ideas proposed

- **Top Energy:** SO dispatch, protection schemes and distributor ANM acting on the same generators
- **Orion:** black start as a priority
- **Powerco:** planned grid outages and ICCP data sharing



Where submitters would start

Most often prioritised

- **GXP forecast:** Unison/Centralines' top priority; also Top Energy, WEL, Cortexo, Counties
- **Relevant SO information:** ENA, Top Energy, Unison, Vector, WEL; Counties wants reciprocal constraints first
- **Material distribution event:** Vector, WEL, Top Energy; needs clear thresholds and automated notice

Strong, with caveats

- **Controllable load during an event:** Cortexo's first choice, backed by ENA and Vector; Unison wants more guidance first
- **DER behaviour in disturbances:** important, but ready later; focus on aggregate behaviour (Cortexo, WEL, Unison)

Over to you

- Do these match your priorities?
- What would make a use case ready to trial?
- Which one will you take to your table?

Common themes in your feedback

- **Authoritative source:** agree it for each data item
- **Primacy:** who prevails when TSO and DSO actions conflict
- **Materiality:** define it and the trigger thresholds
- **Neutrality:** no privileged commercial view
- **Cost and reuse:** build on existing channels; clarify who pays



What submitters say already exists

- Electricity Registry and EIEPs
- CACTIS and Asset Capability Statements
- ICCP, SCADA and GXP metering
- Common Load Management Protocol and ENA emergency demand work
- Flexviz and FlexPoint: about 39 MW of flexibility visible today (Cortexo)
- Electricity Authority DSO roadmap and data hub work

Table exercise: flesh out a use case

60 minutes at 7 tables of 5–6 people.
Pick the use case most pressing from your operational perspective.



The brief for your table

- **Pick** the use case most pressing operationally
- **Name** the operational challenge you are resolving
- **Define** the information needed to address it
- **Work through** requirements 1 to 5
- **Decide** whether your organisation would want to be involved in trialling it



Worksheet: from challenge to use case

Define the need

- What operational challenge or issue are you resolving?
- What information is needed to address it?
- Think about the principles: is static enough to start, or do you need dynamic from day one?

Work through requirements 1–5

- **1 Accountabilities:** who does what, who has primacy?
- **2 Static:** what, from whom?
- **3 Dynamic:** how fast, what triggers it?
- **4 Exchange:** ICCP, registry, WITS, POCP or other?
- **5 Performance:** what behaviour, what evidence?

Be clear by the end on

- Why the information is needed
- Who has it
- What granularity, and static or dynamic
- How you would get it
- Would your organisation like to trial it?

How the next 90 minutes run

11:00 Table exercise

- **60 minutes** at 7 tables of 5–6 people
- Work one or more use cases using the worksheet
- Aim for a use case clear enough to trial

12:00 Playback

- **25 minutes:** 3 minutes per table
- Cover the use case, the challenge, the information, sources and channel
- Say whether your organisation would trial it

12:25 Wrap-up

- **5 minutes**
- We share back the use cases the tables define
- We look for opportunities to work with parties where the operational need justifies the effort of both

Starter prompts for your table

Forecast and share

- **GXP forecast:** what sits behind the GXP, who knows it, and how often does it change?
- **SO information:** which schedules, constraints and warnings do you need, and what action do they change?

During events

- **Controllable load:** how much, who operates it, where, how fast, and how is activation confirmed?
- **Distribution event:** what size of event triggers notice, and what must we know and when?

Disturbances and stuck?

- **DER behaviour:** what aggregate ride-through and protection evidence is needed to model it?
- **Stuck?** ask what operational decision this information would change.

Wrap-up and next steps

- We will refine the requirements and priorities using your feedback
- Nothing here creates new obligations or pre-empts regulatory decisions
- Table outputs will be shared back

A small working group could

- Confirm what existing arrangements already meet
- Select a few priority exchanges to define or trial
- Work through governance and funding before implementation



Thank you for your input

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