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System Operator

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Submission on TSO–DSO coordination: Operational requirements

Introduction

1. Vector welcomes the opportunity to respond to the System Operator's discussion document. Vector supports the five proposed requirements as a framework for stronger TSO-DSO coordination, subject to clear accountability, proportionality, reciprocal information exchange and appropriate funding.
2. This submission builds on Vector's previous positions on future system operation. Vector supports a hybrid model in which distributors manage local network conditions and constraints, while the System Operator remains responsible for national system security and wholesale market operation.

Executive summary

3. Visibility must not be conflated with control. The default exchange boundary should be the TSO-EDB interface, using GXP or portfolio information unless a defined material risk justifies greater granularity.
4. Information should come from the party that creates and controls it. EDBs should not become clearing houses for asset, portfolio or control information held by asset owners, retailers or aggregators, and information exchange must be reciprocal.
5. Vector considers that the Electricity Industry Participation Code should include a distribution system operation framework equivalent in purpose to Part 8. It should establish distribution security outcomes, operating limits, responsibilities and emergency coordination, including enforceable obligations on retailers, aggregators and other parties controlling material distributed resources to respond to emergency requirements affecting grid or distribution system security.
6. Implementation should begin with material distribution event notifications, emergency controllable-load coordination and relevant System Operator information for EDB control rooms. Further obligations should proceed only where benefits, costs, liability, cybersecurity, funding and regulatory authority are established.

Requirement 1: Clear operational accountabilities

7. The System Operator should manage national system security and wholesale market operation, while EDBs remain responsible for local constraints, distribution emergencies, restoration and procurement of local flexibility. Retailers and aggregators should translate

system and network signals into customer and device-level actions, whilst maintaining operation within any network limits applicable to the locations of those devices.

8. The framework must distinguish visibility, notification, coordination, dispatch and control. Where a resource serves several value streams, the framework should establish how competing commitments and instructions are prioritised, including resources already committed to System Operator arrangements, so that conflicting actions are avoided. Physical network limits and pre-existing local security commitments must be respected.
9. A Part 8-equivalent distribution framework should establish clear and enforceable obligations on all parties controlling material distributed resources, including retailers and aggregators, to respond to emergency instructions where their controlled resources are required to support either grid or distribution system security. As increasing volumes of controllable load move beyond direct EDB control, effective emergency response cannot depend solely on bilateral commercial arrangements such as load management protocols where participation is on the basis of reasonable endeavours. Without an enduring regulatory obligation to respond, there is also no assurance that parties controlling distributed resources will make and maintain the systems, communications and operational capability needed to deliver an immediate and reliable emergency response. The framework should therefore provide clear obligations and accountability across the full operation chain, while preserving each EDB's responsibility for operating its network.

Requirement 2: Minimum static information

10. Static information should be required only where it supports a defined planning or operational purpose, as per the principles in the discussion document. The requirement should identify the intended use, authoritative source, aggregation level, update trigger and party responsible for correcting errors.
11. EDBs are generally authoritative for distribution topology, approved connection limits, enduring constraints and EDB-controlled load. Asset owners should remain responsible for asset capability, while retailers and aggregators remain responsible for information about resources and portfolios they control.
12. Vector agrees that aggregation by GXP or portfolio should be the default. More granular information should be required only where aggregation would conceal a material risk and the additional detail would change a decision. Existing connection, asset, market and regulatory information should be reused before new collections are introduced.

Requirement 3: Minimum dynamic information

13. Dynamic information should be exchanged where it can materially change a forecast, security assessment, outage decision or operational response. Requirements should specify lead time, latency, accuracy, availability, fallback arrangements and consequences of incorrect or unavailable information.
14. Information about controllable resources should distinguish technical capability, forecast availability, contracted availability, instructed quantity and delivered response. The party with

current operational control should maintain that information, while the EDB communicates applicable operating envelopes and local constraints.

15. EDBs should notify material distribution events using agreed thresholds based on affected MW, GXPs, duration, loss of control capability and restoration consequences. Reciprocally, EDBs should receive relevant grid constraints, outages, voltage conditions, system warnings, restoration status and market or dispatch actions, including capability testing by operators of distributed assets.
16. Real-time telemetry should not be the default. Secure APIs, portals, managed files and event-triggered messages may be sufficient, with SCADA or ICCP reserved for exchanges whose latency and assurance justify the cost.

Requirement 4: Interoperable information exchange

17. Vector supports common definitions, identifiers, sign conventions, timestamps, measurement boundaries, quality indicators, security requirements and acknowledgement processes. Standardisation should focus on reusable interfaces and governance while allowing flexibility over internal systems.
18. The framework should specify ownership, permitted uses, access rights, validation, confidentiality, change control and incident management. A central platform should not be selected before use cases, information objects, liability and cybersecurity requirements are defined.
19. Operational communications should also use unambiguous hierarchy and terminology so recipients can readily identify the issuing party, the event or constraint concerned and whether action is advisory or mandatory.

Requirement 5: Predictable technical performance

20. Performance expectations should be outcome-based and proportionate to resource size, type, aggregate penetration and credible impact. Responsibility should sit with the party that specifies, installs, configures or controls the equipment.
21. EDBs may enforce connection conditions but should not guarantee continuing performance where equipment settings can later be changed by other parties. Alignment should not require identical settings across all networks where local conditions justify differences and those differences are reflected in relevant models.

Conclusion

22. A focused working group involving the System Operator, Electricity Authority, EDBs, retailers and aggregators should develop the initial exchanges and options for a Part 8-equivalent distribution framework. Initial Code changes could establish core responsibilities, compliance with distribution operating limits, emergency coordination and information obligations.
23. Vector supports a staged, use-case-led programme. Detailed technical requirements should follow only where demonstrated risks and benefits justify them, and trials should be time-

limited and evaluated against defined outcomes, including whether the end-to-end response is sufficiently timely, unambiguous and effective under realistic operating conditions.

Kind regards



Bas van Esch
Market Regulation

Appendix A: Responses to consultation questions

Questions	Vector response
1. What should be changed, added or removed from the five operational requirements?	Retain the five requirements, but add principles preserving accountability, distinguishing visibility from control, requiring reciprocal exchange and preventing EDBs from becoming responsible for data controlled by others. Develop a Part 8-equivalent distribution framework covering security outcomes, operating limits, emergency coordination and obligations for parties controlling material distributed resources.
2. For each information item, is the proposed source best placed to create and maintain an authoritative value?	Not in every case. EDBs are authoritative for network topology, connection limits, constraints and EDB-controlled load; asset owners for asset capability; and retailers or aggregators for portfolio availability, commitments and control status. Each information object should identify its creator, authoritative maintainer, validator, submitter and recipient.
3. Is the proposed level of aggregation and timing proportionate to the operational use?	GXP or portfolio aggregation is the appropriate default. Greater granularity should be required only where it would reveal a material risk and change an operational decision. Timing should follow the use case, with real-time telemetry reserved for information whose latency and assurance materially affect security.
4. Which requirements can already be met through existing information, systems or processes?	Connection records, Asset Capability Statements, EDB systems, market information and regulatory reporting support static requirements. SCADA, GXP metering, operating notices, schedules and control-room communications support dynamic requirements. Existing sources should be mapped before new systems or duplicate collections are introduced.
5. Where are the material information, quality, access or capability gaps?	Key gaps are unclear data ownership, inconsistent identifiers and boundaries, uncertain DER portfolio availability and limited reciprocal information for EDBs. A broader gap is the absence of a coherent Code framework equivalent in purpose to Part 8 for distribution security, responsibilities and emergency coordination.
6. Which initial information exchanges should be prioritised for early definition or trial?	Prioritise material distribution event notifications and emergency controllable-load coordination, covering affected GXPs, MW impact, duration, controller, contractual priority, acknowledgement, delivered response and restoration status.

	Reciprocal System Operator information for EDBs should be included in the same package.
7. Are there relevant initiatives or standards with which the work should align to avoid duplication?	Align with the Electricity Authority's DSO roadmap, network visibility, connections, distribution pricing, device standards and flexibility work, and Electricity Networks Aotearoa initiatives. This work should also inform a new Code part, or equivalent provisions, performing for distribution networks the role Part 8 performs for national common quality and security.
8. Do you agree with the identified priority use cases?	Broadly yes. Prioritise material distribution events, emergency controllable load and System Operator information for EDBs. Progress GXP forecasting where deficiencies are identified, while disturbance behaviour should initially focus on aggregate risks, standards and model requirements.