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From: Electricity Engineers' Association of NZ

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Subject: EEA Submission – Discussion Paper – *Exploring network visibility: costs, benefits and value*

OVERVIEW

The Electricity Engineers' Association (EEA) welcomes the opportunity to provide feedback on the Electricity Authority's *Exploring Network Visibility: Costs, Benefits and Value* discussion paper.

This consultation forms a key part of the Authority's wider programme to improve information availability, coordination, and efficiency across the electricity system. Enhancing network visibility will be central to managing the rapid uptake of distributed energy resources (DERs), the electrification of transport and industry, and the integration of emerging technologies such as batteries and EV chargers.

Our members, comprising distribution businesses, Transpower, consultants, technology providers, and service companies, are responsible for delivering safe, reliable, and efficient electricity services across Aotearoa. This submission reflects their practical experience and the EEA's ongoing collaboration with the Electricity Authority, Commerce Commission, Flexforum and Electricity Networks Association (ENA) to ensure visibility improvements are well-governed, proportionate, and technically sound.

The EEA supports the Authority's staged approach and agrees that visibility improvements must build on progress already underway through the Commerce Commission's Targeted Information Disclosure Reviews, the Authority's proposed capacity-disclosure amendments, and EEA-led initiatives such as Streamlining Connections, FlexTalk 2.0, and the development of a Common Data Governance Guide and Common Data Models.

Collectively, these initiatives are already delivering measurable gains in transparency, interoperability, and consumer value. The next step is coordination, aligning frameworks, standards, and terminology before introducing new regulatory layers.

Summary of Key Points

- 1. Sector Progress and Coordination:** Continue aligning efforts under a national roadmap co-led by the Authority, Commerce Commission, Flexforum, ENA, and EEA.

2. **Better Data, Not More Data:** Focus on quality, standardisation, and metadata before expanding disclosure volume.
3. **Proportionality and Capability:** Ensure flexibility for smaller distributors and staged implementation.
4. **Governance and Standards First:** Prioritise support and development EEA's Common Data Governance Guide and Common Data Models as foundational. These initiatives provide the interoperability and data-quality foundation required before more granular reporting is introduced.
5. **Alignment Across Agencies –** Harmonise timing, definitions, and obligations between the Authority, Commerce Commission, Flexforum, ENA, and EEA.to avoid duplication and ensure consistency.
6. **Consumer and System Benefits:** Improved visibility supports better planning, more efficient use of existing infrastructure, faster connection processes, and integration of flexible and distributed resources—all of which benefit consumers and the wider energy system.
7. **Education and Communication:** A national catalogue, plain-language guidance, and sector-wide training will deliver immediate value and will make existing information far more usable.

The EEA's advice is grounded in the day-to-day realities of network planning, operation, and data management. It reflects the collective expertise of those responsible for implementing visibility and disclosure requirements in practice. Our feedback seeks to ensure that any next steps are technically sound, practically workable, and aligned with the sector's capability and priorities.

Key Considerations

- **Cost–Benefit and Value Add:** New visibility requirements must demonstrate clear benefit to end-users. For many large developers, basic capacity maps may add limited marginal value relative to the resources required for their preparation and maintenance.
- **Data Quality and Maintenance:** Maintaining accurate, validated, and up-to-date datasets requires ongoing investment and expertise. Improvements should prioritise sustainable processes rather than one-off reporting.
- **Interoperability and Legacy Systems:** Many networks rely on legacy GIS and operational systems that cannot easily export open-data formats. Common data models and shared tools are necessary to reduce duplication.
- **Resourcing and Capability:** Smaller distributors face particular challenges recruiting data engineers and integrating digital systems. A flexible, staged approach is required.
- **Privacy and Trust:** Consumer confidence depends on clear governance, secure data handling, and transparency in how information is used.
- **International Alignment:** Lessons from the AER in Australia and Ofgem in the UK demonstrate the value of open-data principles, standardised metadata, and proportionate implementation.

New Zealand's priority should be to coordinate and consolidate existing initiatives, enhance the quality and usability of current datasets, and develop a national roadmap—co-led by the Authority, Commerce Commission, ENA, and EEA—before introducing any new or expanded regulatory requirements.

The EEA appreciates the Authority's commitment to collaboration and transparency in advancing this work. We look forward to continuing to partner with the Authority, Commerce Commission, Flexforum and ENA to develop a coordinated roadmap that ensures network visibility delivers practical, enduring benefits for consumers, distributors, and the wider energy system.

The following section provides detailed responses to each of the Authority's consultation questions, expanding on these issues and recommendations and highlighting specific opportunities for coordination and improvement.

Response to Consultation Questions

Q1. Are stakeholders aware of the extent of the information on network visibility currently being provided by distributors (including through disclosures)?

Awareness of existing network-visibility information across the sector remains uneven and fragmented. Distributors and regulators are familiar with the requirements of the Commerce Commission's Information Disclosure (ID) regime and Asset Management Plans (AMPs), but awareness among external users, such as developers, technology providers, consultants, and local authorities, is far more limited.

While much of the necessary information already exists, it is spread across multiple documents, formats, and websites, often making it difficult to locate or interpret. For most access seekers, the challenge is discoverability rather than availability. Capacity maps and planning data, where published, differ considerably in design, scope, and terminology, and are frequently static PDF files that offer limited analytical or comparative value.

To address these issues, the EEA recommends that the Authority, Commerce Commission, Flexforum ENA, and EEA work together to develop a national visibility data catalogue or portal. This platform would provide a single point of reference describing what network-visibility datasets are already published, where they can be accessed, their purpose, and their update frequency.

Such a catalogue would substantially improve transparency and usability, reduce duplicated data requests, and form a consistent foundation for any future visibility enhancements.

Q2. How do current distributor disclosures support the understanding of available capacity, constraints and opportunities on high- and low-voltage networks?

As outlined in Question 1, existing disclosures, particularly the Commerce Commission's Information Disclosure (ID) Schedules 10 and 11, distributors' Asset Management Plans (AMPs), and publicly available connection-capacity maps—already provide a solid foundation for understanding network capacity, constraints, and future opportunities. Together, these resources support long-term planning, regulatory oversight, and, in some cases, the assessment of DER project feasibility.

However, the format, granularity, and usability of this information vary widely between distributors. Some networks publish geospatial capacity data that is highly informative for developers and consultants, while others rely on static tables or descriptive commentary within AMPs. Differences in measurement units, thresholds, and terminology make direct comparison difficult and limit how readily the data can be integrated into planning tools.

The most effective improvement would be greater national consistency in how information is defined, structured, and presented. The EEA's *Streamlining Connections programme* is currently developing

draft templates for both low- and medium-voltage connection data that could readily serve as the basis for such standards. Establishing common definitions for key terms, such as available capacity, constraint, hosting capacity, and firm capacity, would significantly enhance the value and comparability of existing disclosures without adding new reporting burdens.

Finally, improving discoverability and metadata would allow the same underlying information to be reused for multiple purposes: supporting customer engagement, enabling regional and national planning coordination, and informing regulatory or policy analysis.

Q3. How are interested parties making use of existing disclosures to support more efficient outcomes?

The use of existing network-visibility data by external stakeholders remains limited, inconsistent, and often indirect. While regulators, analysts, and consultants make regular use of published information for oversight and benchmarking purposes, most developers, installers, and community energy groups rely on direct engagement with distributors to obtain the specific data they need for projects. In practice, this means much of the information already disclosed under the Information Disclosure (ID) regime or within Asset Management Plans (AMPs) is not widely leveraged outside regulatory or academic settings.

There are several reasons for this. First, awareness of what information exists and where to find it is still relatively low among potential users. Second, data presentation and structure vary significantly between distributors, ranging from detailed geospatial maps to static tables or text-based summaries, making comparison and analysis challenging. Third, much of the data is highly technical, and limited contextual explanation or interpretive guidance leaves non-specialist users unsure how to apply it effectively or safely.

As a result, access seekers frequently revert to bespoke data requests or informal conversations with engineering teams. These interactions can be valuable but also resource-intensive, creating inefficiency for both the requesting party and the distributor, and leading to inconsistent information being used across different projects.

The EEA's current initiatives are designed to improve both usability and confidence in published network data. We have just started a project to develop a Common Data Governance Guide and explore Common Data Models to establish clear metadata, quality-assurance processes, and shared definitions, enabling consistency across distributors and interoperability with other systems. When combined with better communication and education activities—outlined later in Question 13—these initiatives will make it easier for stakeholders to locate, interpret, and reuse network information.

In the longer term, improving the accessibility and presentation of existing data will allow the same underlying information to support a wider range of applications, from connection planning and

regional-energy modelling to policy development and consumer engagement. This is the most effective path to ensuring the effort invested by distributors in collecting and maintaining visibility data translates into tangible value for all users of the electricity system.

Q4. Would changes to the type of data, format, regularity or granularity of current distributor disclosures better support decision-making?

The EEA agrees that improving the format, consistency, and accessibility of existing disclosures would help support more informed decision-making by regulators, developers, and consumers. However, any substantial changes to disclosure type, frequency, or granularity would be premature at this stage. The sector is still in the process of implementing the Commerce Commission's *Targeted Information Disclosure Reviews (TIDR Tranches 1 & 2)* and the Electricity Authority's proposed *2026 capacity-disclosure Code amendments*, which are not yet in effect. It is important to evaluate the impact of these reforms before introducing additional reporting obligations.

The immediate priority is to focus on standardisation and usability rather than expanding reporting. Distributors already publish a substantial amount of relevant data through ID schedules, AMPs, and capacity maps—but formats, units, and definitions vary widely. Aligning how key terms such as available capacity, constraint, and hosting capacity are defined and presented would provide far greater benefit than increasing data volume.

The EEA recommends a nationally consistent data structure and metadata framework that builds on the outputs of the Streamlining Connections programme and EEA's proposed Common Data Governance Guide. These provide a scalable foundation for harmonising data across distributors and ensuring interoperability with regulatory disclosures.

International experience reinforces this proportionate approach. The Australian Energy Regulator (AER) has taken a pragmatic stance in its *Network Visibility Project*, requiring standardised, open-format data only for high-value datasets such as hosting capacity, voltage, and load profiles. Similarly, the UK's Ofgem has focused on structured, machine-readable data under its *Data Best Practice framework*, leaving update frequency and delivery methods flexible. Both models show that improving structure, accessibility, and comparability yields greater benefit than mandating new types of data.

For New Zealand, the EEA recommends a phased approach: first, improve the consistency and interoperability of existing disclosures; second, strengthen metadata and machine readability; and only then consider whether additional data types or more granular visibility are justified by clear consumer benefit. This measured progression will ensure that any changes enhance decision-making without diverting resources from more fundamental improvements in data governance and quality.

Q5. What other disclosures from distributors relating to network information would further inform choices and decisions of access seekers and other interested parties?

As outlined in Question 4, most of the network information required to support informed decision-making already exists within current disclosures and distributor publications. The key opportunity now is not to expand the quantity of data collected, but to enhance the quality, consistency, and discoverability of what is already available.

That said, Several low-cost improvements could deliver meaningful value to access seekers and planners if implemented consistently:

- **Developing standardised hosting-capacity and constraint indicators** using consistent visual conventions and clearly defined thresholds. Presenting this information in an accessible, map-based format with simple explanatory notes would allow developers and planners to quickly identify where additional capacity may be available, or where network reinforcement is likely to be required.
- **Aggregated voltage-performance summaries** at the feeder or zone-substation level. Aggregated voltage data, presented as ranges or percentile statistics rather than raw measurements, would offer useful insight into network performance and the likely suitability of locations for distributed generation or flexible loads. Importantly, this information should be standardised and de-identified to protect customer privacy and prevent misinterpretation.
- **Improving visibility of planned investment and augmentation schedules**, particularly where projects are intended to address known capacity constraints. Linking this information to capacity maps or hosting-capacity data would help access seekers understand when and where relief is expected, allowing better sequencing of DER, community energy, or development projects.

These improvements should be developed under the same data governance and quality framework described in Question 4, ensuring alignment across distributors and agencies. Before any new disclosure types are mandated, pilot projects should be used to test practicality and consumer value.

Before any new data types are mandated, the EEA recommends that the Authority and industry pilot and test these approaches through targeted trials. This will ensure that any additional disclosures are technically feasible, deliver genuine consumer value, and can be maintained efficiently over time.

In summary, the focus should remain on quality, comparability, and discoverability, not volume. Enhancements that make existing data more interpretable and consistent will deliver greater value to all users than expanding reporting obligations.

Q6. What are distributors' perspectives on the value of their work collating and publishing network visibility information for their own businesses?

Distributors view their work on network visibility as delivering real operational and strategic value for their own businesses, even though the effort required to collate, verify, and maintain this information is substantial.

Internally, improved visibility data supports more accurate network planning and investment decisions, particularly when assessing future load growth or evaluating the need for reinforcement. It enhances operational efficiency, enabling early identification of voltage or capacity issues and improving outage response and asset-condition monitoring. Some distributors have also found that publishing capacity maps and planning data has strengthened stakeholder confidence and transparency with regulators, councils, and large customers.

However, EEA notes that these benefits must be balanced against significant ongoing effort and cost. Data consolidation across legacy systems, GIS updates, and validation processes can be resource-intensive and require specialist data-engineering capability that smaller networks often lack. Maintaining geospatial capacity maps is not a one-off task; datasets must be continually updated to remain accurate as the network changes.

Distributors also highlight that the marginal value of additional data publication decreases rapidly once key datasets are available. Beyond a certain level of granularity, the cost of maintaining new datasets may outweigh the benefit—particularly where access seekers are few or where local conditions change frequently.

The greatest long-term value therefore comes from collaboration and standardisation, rather than additional volume of disclosure. Shared tools, templates, and governance frameworks—such as the EEA's proposed Common Data Models and Common Data Governance Guide—would allow distributors to leverage common methodologies, improving efficiency and data integrity across the sector.

In short, distributors recognise the operational and reputational benefits of publishing visibility information but emphasise that these benefits depend on practical implementation, alignment with other regulatory requirements, and a proportionate balance between transparency and workload.

Q7. What are distributors' perspectives on how well interested parties are using the data they already publish?

As discussed in Questions 1–3, the extent to which external stakeholders use published network-visibility information remains modest and highly variable. While some consultants, large developers,

and researchers make good use of published data, most smaller access seekers, installers, and community-energy groups continue to rely on direct engagement with distributors to obtain the information they need.

This limited utilisation reflects several persistent challenges. First, awareness of existing disclosures remains low, particularly among non-regulatory audiences. Second, there is considerable variation in data presentation, structure, and interpretation across distributors. Without standardised templates or explanatory material, users find it difficult to compare datasets or translate them into practical insights. Third, the highly technical nature of network information often requires engineering expertise to interpret safely and accurately. Without clear guidance, there is a risk that data may be misread or misapplied.

As stated previously, the EEA's ongoing initiatives are specifically designed to close this gap between publication and use and ensuring that information published by different distributors is easier to interpret and integrate into planning or modelling tools.

The EEA also sees an important role for education and communication, as noted further in Question 13. Practical resources, such as a national data catalogue, plain-language guidance on interpreting visibility datasets, and targeted training for developers and consultants, would help bridge the gap between data availability and practical usability.

Overall, the current low level of utilisation does not indicate a lack of value in network-visibility data, but rather that its potential has yet to be fully realised. By focusing on consistency, communication, and accessibility, the industry can ensure that the significant investment distributors have already made in collecting and publishing data translates into real-world benefits for those seeking to connect, plan, or invest in New Zealand's electricity networks.

Q8. What are stakeholders' perspectives on recent developments regarding access to smart meter data?

The EEA recognises that access to smart-meter data, particularly voltage data, represents one of the most practical and cost-effective opportunities to enhance low-voltage (LV) network visibility in the near term. Smart meters already collect vast quantities of information that can help distributors monitor network performance, identify emerging constraints, and better understand load patterns at the household and feeder level.

However, current access arrangements are fragmented and inconsistent across the sector. Some distributors have negotiated bilateral agreements with Meter Equipment Providers (MEPs) to obtain

voltage data, while others face commercial, contractual, or technical barriers. The formats, sampling intervals, and quality of voltage data provided also differ between MEPs, complicating integration into network systems. In some cases, data latency or limited historical retention constrains its usefulness for operational decision-making.

The key challenges can be grouped into three areas:

1. **Data access and standardisation** – There is no uniform process or interface for distributors to access or request smart-meter data. Each arrangement is bespoke, leading to inefficiency and duplication.
2. **Cost and resourcing** – Fees and contractual conditions vary between MEPs, and ongoing data acquisition costs can be significant, particularly for smaller EDBs with limited analytics capability.
3. **Governance and privacy** – Questions remain around the appropriate governance of voltage data, the scope of permissible use, and how privacy obligations under the *Privacy Act 2020* and the *Electricity Industry Participation Code* are interpreted in practice. Any future framework must ensure full alignment with these instruments, embedding privacy-by-design principles and clear consumer-consent protocols.

The EEA supports the development of a coordinated, standards-based framework for smart-meter data access, co-designed by the Authority, EDBs, MEPs, and retailers. Such a framework should:

- Establish common protocols for data access and sharing
- Define minimum data quality and latency expectations
- Clarify privacy and consent provisions; and
- Ensure costs are equitably shared among beneficiaries.

This work could build on lessons from existing initiatives such as the *FlexTalk 2.0 project*, which demonstrates the value of smart-meter and device-level data for managing household flexibility. Pilot projects under this model could be used to test technical standards, data-exchange protocols, and consumer engagement approaches before any wider implementation.

Improving access to smart-meter data through an agreed national framework would materially improve LV-level visibility and enhance coordination between distributors, aggregators, and consumers, supporting both operational efficiency and the development of future flexibility markets.

Q9. Is the pace of distributors' progress on developing network visibility capability appropriate? What are the expectations of access seekers and other interested parties regarding timeframes?

The current pace of progress in improving network visibility is appropriate and proportionate to the sector's capability, available resources, and the maturity of supporting regulatory frameworks.

Over the past five years, distributors have made substantial advances in data collection, monitoring, and publication. These include improved Information Disclosure (ID) reporting, deployment of low-voltage monitoring equipment, rollout of geospatial capacity maps, and the development of digital-twin and load-modelling tools.

Many of these improvements have occurred voluntarily, reflecting the industry's commitment to transparency and innovation rather than a prescriptive regulatory push.

Projects such as *Streamlining Connections* and *FlexTalk 2.0* illustrate the momentum already underway. *Streamlining Connections* is improving how technical data about distributed energy resource (DER) connections and hosting capacity is gathered and shared, while *FlexTalk 2.0* demonstrates the value of coordinated visibility and control in managing household flexibility. Together, these initiatives are providing actionable insights into where data improvements deliver the most benefit and how they can be achieved efficiently.

That said, there is scope to accelerate progress—particularly where collaboration, capability, or funding constraints currently limit advancement. The Electricity Authority could consider:

- **Supporting shared tools and infrastructure**, such as a national visibility data catalogue or portal, to reduce duplication and make existing information more discoverable
- **Providing guidance or templates** to streamline the development of standardised capacity maps and metadata structures
- **Facilitating data-sharing arrangements** with Meter Equipment Providers (MEPs) to enable wider access to smart-meter voltage data (as discussed in Q8)
- **Coordinating funding or co-investment** for pilot projects that test scalable approaches to low-voltage visibility and data integration; and
- **Aligning regulatory expectations** between the Authority and Commerce Commission to minimise duplication and free up resources for implementation rather than compliance.

These measures would allow progress to proceed faster while maintaining alignment and proportionality. The EEA supports a coordinated national roadmap, co-developed by the Authority, Commerce Commission, ENA, and EEA, to sequence initiatives, prioritise investment, and track progress transparently.

In short, while the sector's current rate of progress is steady and responsible, greater coordination, targeted funding, and shared tools could enable faster delivery of the visibility outcomes that will underpin New Zealand's future distributed and flexible electricity system.

Q10. What barriers exist to distributors progressing more rapidly with network-visibility improvements?

While distributors are committed to improving network visibility, they face a combination of technical, organisational, and regulatory barriers that constrain the speed and efficiency of progress.

Technical barriers arise from the legacy nature of many operational and asset-management systems. Existing GIS, SCADA, and OMS platforms were not designed for open-data exchange or near-real-time integration. Low-voltage topology information is often incomplete or fragmented, and the process of validating, reconciling, and maintaining this data is resource-intensive. Upgrading or integrating these systems requires both capital investment and highly specialised data-engineering expertise that is in short supply across the sector.

Organisational barriers include capability and resourcing constraints. Smaller distributors in particular lack dedicated data or analytics teams, making it difficult to maintain visibility initiatives alongside core operational priorities. Recruiting and retaining staff with digital and data-governance skills is a persistent challenge.

Regulatory and structural barriers also play a role. Overlapping disclosure requirements from the Authority and the Commerce Commission create duplication and uncertainty about priorities. In some cases, inconsistent terminology and timing between regulatory frameworks complicate planning and slow progress.

To accelerate delivery, the EEA recommends that the Authority consider several enabling actions:

- **Coordinate with the Commerce Commission** to streamline overlapping reporting requirements and establish consistent terminology and timing
- **Support the development of shared tools and templates**, working with the EEA to develop a Common Data Governance Guide and Common Data Models, to reduce duplication of effort across distributors
- **Promote capability-building initiatives**, including joint training and peer-learning forums focused on data governance, interoperability, and digital-engineering skills; and
- **Encourage collaborative demonstration projects**, co-funded by the Authority or EECA, that test scalable approaches to LV-level visibility, smart-meter integration, or geospatial data publication.

These actions would directly address the barriers slowing progress while preserving the industry's collaborative and proportionate approach. In the EEA's view, targeted coordination, capability development, and shared infrastructure would deliver faster, more consistent outcomes than new prescriptive regulation.

Q11. Do you agree that improving network visibility supports improved consumer and system outcomes? Why or why not?

Improving network visibility delivers significant benefits for both consumers and the electricity system as a whole. Better data and transparency allow distributors, regulators, and access seekers to make more efficient decisions, reducing costs and enabling smarter use of existing infrastructure.

For consumers and developers, enhanced visibility means:

- **Faster and clearer connection processes**, reducing uncertainty for distributed energy resource (DER) projects and minimising delays
- **Transparency of local network conditions**, helping investors and community groups identify areas best suited for new generation, storage, or flexible load; and
- **Opportunities to participate in emerging flexibility markets**, where households and businesses can be rewarded for shifting or reducing demand at times of system stress.

For distributors and system operators, visibility improvements provide:

- **Better operational management**, including proactive voltage control, outage prediction, and network balancing
- **More accurate planning and investment decisions**, allowing reinforcement to be targeted where it is most needed and avoiding premature capital expenditure; and
- **Enhanced coordination between transmission and distribution networks**, supporting whole-of-system optimisation.

These outcomes translate directly into consumer value—through lower long-term costs, improved reliability, and increased ability to integrate clean generation and flexible demand. They also help regulators and policymakers identify the most cost-effective pathways for decarbonisation.

However, the EEA emphasises that data quality and interoperability are essential prerequisites for these benefits to materialise. Poorly defined or inconsistent data can lead to misinterpretation, wasted investment, and consumer confusion. The development of Common Data Governance frameworks and Common Data Models would provide the governance, structure, and validation framework needed to ensure visibility data is accurate, comparable, and fit for purpose.

In short, improved visibility is not an end in itself, it is the foundation for a more flexible, efficient, and consumer-centred electricity system. By linking visibility to flexibility and DER integration, the sector can translate data into real-time operational value and consumer participation—an issue explored further in Question 18.

Q12. Should the Electricity Authority consider further regulatory interventions at this stage to improve network visibility? If so, what form should they take?

At this stage, the EEA does not support further regulatory intervention on network visibility beyond what is already underway. Substantial regulatory reform is already in progress through the Commerce Commission’s *Targeted Information Disclosure Reviews (TIDR Tranches 1 & 2)* and the Electricity Authority’s proposed *2026 capacity-disclosure Code amendments*. Once implemented, these initiatives will significantly enhance transparency, consistency, and comparability across distributors. It is therefore important to first assess their effectiveness before introducing any new obligations.

The EEA considers that the immediate priority should be to consolidate and evaluate these existing reforms, ensuring that they work together effectively and deliver the intended benefits. Introducing additional prescriptive requirements at this stage risks creating overlap, confusion, and administrative burden without clear consumer benefit.

Rather than new regulation, the Authority’s role should focus on coordination, facilitation, and capability-building—aligning data standards, definitions, and reporting timelines across existing frameworks. This includes close coordination with the Commerce Commission and ENA, and continued collaboration with the EEA (and other bodies such as Flexforum) through initiatives such as *Streamlining Connections* and the proposed *Common Data Governance Guide*.

If, however, voluntary and coordinated industry progress does not deliver the expected outcomes within a reasonable timeframe, the EEA acknowledges that the Authority may need to consider a more directive or “heavier-touch” regulatory approach. This could involve mandating minimum data-quality standards, update frequency, or metadata requirements for key datasets, provided these are informed by a thorough cost–benefit assessment and are proportionate to the value created for consumers.

In summary, the EEA supports the Authority’s leadership in developing a clear, nationally consistent framework for network visibility, but believes the most effective path is a phased, collaborative approach supported by strong evaluation. Should that approach fail to achieve the desired transparency, the Authority would then be justified in considering a more formal regulatory mechanism, building on the lessons learned from earlier phases.

Q13. What role could education, communication and guidance play in improving awareness and use of network-visibility information?

Education and communication are among the most effective and least costly tools for improving network visibility outcomes. Much of the value from data publication is only realised when users understand what information is available, what it means, and how to apply it correctly.

Currently, awareness and understanding of published network data remain low, particularly among developers, local councils, and smaller technology providers. Many access seekers are unsure where to find information or how to interpret technical terms such as firm capacity, hosting capacity, or constraint. This leads to repeated queries to distributors and inconsistent use of the data that is already available.

The EEA therefore sees a strong case for the Electricity Authority, working alongside the EEA, ENA, and the Commerce Commission, to invest in practical guidance and communication resources that make existing data more discoverable and usable. This could include:

- **A national network visibility data catalogue or portal**, consolidating links to existing disclosures and describing their purpose, scope, and update frequency;
- **Plain-language guidance material and FAQs** explaining key terms, methodologies, and limitations of visibility data;
- **Case studies and exemplar capacity maps**, showing how information can be used responsibly by developers and planners;
- **Regular industry workshops and webinars**, coordinated through the EEA, to support peer learning and data-literacy improvement; and
- **Integration of visibility guidance** into national technical guidelines (i.e. EEA) and training programmes, ensuring consistency across industry resources.

These steps would enhance confidence and competence among data users while reducing duplication of effort and repetitive information requests to distributors.

EEA also emphasises that improving communication is a shared responsibility across agencies and industry. The Authority can provide leadership and coordination, while EEA, Flexforum, SEANZ and ENA can leverage their established networks to deliver sector-wide education and ensure consistency of messaging.

In the longer term, embedding education and communication alongside regulatory and technical initiatives will ensure that improvements in visibility translate into real, usable value for consumers, developers, and policy-makers alike.

Q14. Of the intervention options proposed by the Authority, which option (or combination of options) do you prefer, and why?

The EEA supports an industry-led approach (**Option A**), complemented by a regulatory backstop (**Option B**) to provide accountability and ensure progress is sustained. This hybrid model strikes the right balance between flexibility, innovation, and assurance.

An industry-led approach recognises that distributors, through collaboration with the EEA, ENA, and the Commerce Commission, are already developing practical solutions that address visibility challenges. Initiatives such as *Streamlining Connections*, *FlexTalk 2.0*, and the proposed Common Data Governance Guide demonstrate the sector's commitment to improving data quality, transparency, and interoperability. These programmes have delivered measurable progress without the need for prescriptive regulatory intervention.

However, a regulatory backstop remains valuable as a signal of policy intent and as a means to maintain momentum. A light-touch framework, focused on common definitions, metadata requirements, or minimum update frequency, would provide confidence that all distributors are meeting baseline expectations while still allowing flexibility in how data is presented and managed.

This balanced approach also allows the Authority to adapt and scale over time. Early implementation can rely on voluntary alignment and pilot projects; once best practice is established, the Authority can codify proven standards into guidance or Code provisions if necessary. Such a progression ensures that regulatory settings evolve in response to demonstrated value and industry capability, rather than ahead of them.

Option C—introducing a prescriptive, top-down regulatory framework—would likely slow progress and divert resources from implementation to compliance. It risks locking in immature standards and limiting innovation.

In summary, the EEA recommends a coordinated industry-led model, supported by a measured regulatory safeguard. This approach maximises learning, ensures practicality, and maintains momentum while keeping the focus on delivering genuine consumer and system benefits.

Q15. Which areas of network visibility should be prioritised in the near term?

In the EEA's view, the next two to three years should focus on consolidating and standardising existing efforts, rather than expanding reporting scope. Meaningful near-term progress will come from improving consistency, usability, and coordination—laying the groundwork for a more connected and transparent visibility framework.

The EEA recommends five key near-term priorities:

1. Standardise and align existing capacity and constraint data

Develop consistent templates and definitions for both low- and medium-voltage network data, building on the Streamlining Connections programme. A shared national approach to defining terms such as hosting capacity, available capacity, and firm capacity will significantly improve comparability and understanding across networks.

2. Enhance metadata and discoverability

Establish a national data catalogue or portal, jointly maintained by the Authority, Commerce Commission, ENA and EEA, that provides clear descriptions, links, and update schedules for all publicly available visibility datasets. This would improve transparency and reduce the need for bespoke data requests.

3. Implement the Common Data Governance Guide and Common Data Models

Encourage distributors to adopt these frameworks as a foundation for consistent data structures, validation processes, and version control. Doing so will improve the quality and interoperability of all existing and future visibility datasets.

4. Targeted pilots for low-voltage visibility

Support demonstration projects that integrate smart-meter voltage data, DER telemetry, and GIS information to improve LV visibility in specific regions. These pilots will help validate cost–benefit assumptions, test data standards, and inform scalable national implementation.

5. Develop a coordinated national roadmap for network visibility

Establish a cross-agency roadmap co-developed by the Authority, Commerce Commission, ENA, Flexforum and EEA. The roadmap should sequence actions across short-, medium-, and long-term horizons, identify dependencies, and track progress transparently through agreed milestones.

These near-term actions are achievable within existing regulatory frameworks and will deliver tangible, measurable benefits for data users while building readiness for more advanced visibility initiatives in the future.

Importantly, this approach prioritises quality over quantity—focusing on accuracy, standardisation, and user value rather than expanding disclosure requirements prematurely. By getting the fundamentals right, New Zealand can build a trusted, efficient foundation for the next generation of visibility and flexibility services.

Q16. Should the Electricity Authority draw on the Australian Energy Regulator’s (AER) Low-Voltage Network Visibility work to inform New Zealand’s approach?

The Australian Energy Regulator’s (AER) *Network Visibility and Data Portal* provides a useful reference point for how visibility can be improved through targeted, high-value datasets and clear governance frameworks rather than wholesale data expansion.

The AER’s approach has focused on a small set of standardised, machine-readable datasets—including hosting-capacity maps, voltage and load profiles, and basic DER connection statistics. This prioritisation has enabled distributors to focus on improving data quality and comparability before extending scope. Importantly, the AER allowed flexibility in how distributors met reporting expectations, recognising the diversity of system architectures, resourcing levels, and regional contexts across Australia’s networks.

Three key lessons from the AER experience are particularly relevant to New Zealand:

1. Start small, standardise, then scale

Requiring a limited number of high-value datasets—supported by clear definitions and metadata—delivers better outcomes than mandating large volumes of data prematurely. The emphasis should be on consistent, interpretable information that users can trust and apply with confidence.

2. Prioritise interoperability and open formats

The AER’s use of common data structures and open APIs has reduced duplication and enabled integration into third-party tools and planning platforms. A similar approach in New Zealand would support more consistent analytics across EDBs and encourage innovation in data use.

3. Support learning before compliance

The AER initially framed its reporting requirements as guidance, allowing time for iterative improvement before introducing formal compliance expectations. This created space for learning, capability-building, and the development of shared best practice.

For New Zealand, the key takeaway is to adapt rather than replicate the AER model. Our distribution networks are smaller, more diverse, and already subject to detailed information disclosure through the Commerce Commission. A more proportionate approach—built around the EEA’s proposed Common Data Governance Guide and Common Data Models—would provide the necessary structure without creating unnecessary administrative complexity.

The EEA recommends that the Authority and industry adopt the AER’s principles of standardisation, interoperability, and proportionality, while aligning implementation with domestic regulatory

frameworks and local capability. This will ensure New Zealand's visibility framework remains both effective and practical.

Q17. Are there any other international approaches the Authority should draw on to inform New Zealand's approach to network visibility?

International experience reinforces that successful network visibility frameworks depend less on the volume of data disclosed and more on governance, interoperability, and shared standards. Regulators in comparable jurisdictions have converged on a common principle: data should be as open as possible, and as closed as necessary, supported by clear metadata and strong privacy safeguards.

In the United Kingdom, Ofgem's *Data Best Practice Guidance* underpins all distribution data-sharing initiatives. It mandates the use of open, machine-readable formats and requires distributors to justify any restrictions on access. Ofgem's approach emphasises collaboration, through the Energy Networks Association (ENA UK), to ensure consistent standards and avoid duplication across network operators. This framework has encouraged innovation in analytics, planning, and flexibility services while preserving operational security and consumer privacy.

Across Europe, the Council of European Energy Regulators (CEER) has promoted alignment with the *Common Information Model* (CIM) standards (IEC 61968 and 61970) to enable interoperability across platforms. Many EU Member States now require distribution system operators (DSOs) to use these models for exchanging grid and DER data, ensuring consistency from local to national levels.

In the United States, the Electric Power Research Institute (EPRI) and Department of Energy (DOE) have emphasised *federated data-sharing models*. Rather than mandating centralised databases, US frameworks prioritise local data stewardship under common interoperability and cybersecurity standards. This decentralised approach allows flexibility while maintaining consistency of access and format.

These international examples share several common success factors:

- **A focus on governance and standardisation first**, rather than premature data expansion
- **Use of open, machine-readable formats** to enable integration into third-party tools
- **Clear metadata and contextual guidance**, ensuring data is correctly interpreted; and
- **Emphasis on privacy, proportionality, and stakeholder collaboration.**

New Zealand's current direction, through Flexforum, the EEA's work programme, and the Authority's coordination with the Commerce Commission, embodies these principles. The key is to continue building capability and alignment before codifying new requirements.

By following the pragmatic path established internationally—governance first, harmonisation second, expansion third—New Zealand can achieve a network-visibility framework that is both technically robust and efficient, supporting innovation and consumer value without unnecessary regulatory overhead.

Q18. How could improving network visibility complement and support flexibility markets and distributed-energy-resource (DER) integration?

Improved network visibility is a critical enabler of demand flexibility, distributed energy resource (DER) integration, and efficient operation of New Zealand’s future electricity system. Visibility provides the essential data foundation that allows both distributors and consumers to make informed, coordinated, and economically efficient decisions.

For distributors, enhanced visibility enables the real-time and forecast management of local network conditions—identifying where flexibility has the most value, where hosting capacity is nearing its limits, and how DER can be safely and efficiently accommodated. For flexibility providers and aggregators, it supports transparent and location-specific market signals, helping them deploy resources where they can deliver the greatest benefit.

The relationship between visibility and flexibility is mutually reinforcing:

- **Visibility provides insight**—accurate, timely data on network load, voltage, and hosting capacity
- **Flexibility provides response**—enabling DERs, smart devices, and flexible loads to act on those insights to relieve constraints or support reliability.

EEA-led initiatives are already demonstrating this relationship in practice.

- *FlexTalk 2.0* is testing how smart devices, energy management systems, and network signals can coordinate household flexibility, using real-time data to manage load shifting and reduce peaks.
- *Streamlining Connections* is improving data quality and consistency in DER connection processes, ensuring distributors and access seekers have shared, trusted information.
- The development of a Common Data Governance Guide and Common Data Models will provide the interoperability and quality framework needed for flexibility platforms and visibility tools to exchange information seamlessly.

As flexibility markets evolve, interoperable data standards and consistent visibility will be essential for verifying performance, enabling settlement, and ensuring that system and consumer benefits are measurable and equitable. Improved visibility also supports regulatory confidence by providing

transparent evidence of where flexibility is being used effectively and how it contributes to reliability and decarbonisation goals.

In summary, network visibility and flexibility are two sides of the same transition. Visibility makes flexibility possible, and flexibility converts visibility into value. The EEA recommends that the Authority continue to develop its Flexibility Plan (with Flexforum) and Visibility Workstream in parallel, ensuring both share common data standards, governance frameworks, and evaluation metrics. This alignment will help deliver a smarter, more responsive, and consumer-centric electricity system for Aotearoa.

Contact

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