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To: Electricity Authority (the Authority)
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From: Electricity Engineers' Association of NZ

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Subject: EEA Submission – Consultation Paper – Addressing common quality information requirements

OVERVIEW

The Electricity Engineers Association (EEA) of NZ welcomes the opportunity to provide feedback on The Electricity Authority's (the Authority) consultation paper on *"Addressing common quality information requirements"*.

The EEA represents over 70 Corporate Members (companies) and 600 Individual Members across Aotearoa New Zealand from all engineering disciplines and sectors of the electricity supply industry (see Appendix A).

Collectively, we are the power industry's largest collaborative forum in Aotearoa New Zealand, provide clarity on complex engineering and technical issues, practical support and solutions, and market intelligence to support our members and other industry stakeholders to deliver.

The EEA supports the Authority's endeavours to improving the consistency and accessibility of quality-related information across the sector. This consultation is a valuable opportunity to align our industry's approach to data quality, transparency, and interoperability, which are essential for enhancing the efficiency and reliability of New Zealand's electricity network.

In our response, we have outlined our agreement with the Authority's high-level evaluation of the shortlisted options, while providing recommendations for enhancing data standardisation and long-term adaptability of the proposed solutions. We hope these suggestions contribute to developing a robust framework that will support sustainable, data-driven decision-making within the sector.

EEA is keen to continue our collaboration with the Authority, industry, and other stakeholders as we work towards improved information standards that will benefit New Zealand's electricity industry and its consumers.

Introduction

Q1 (page 19): Do you agree with the key drivers of change in power system modelling requirements identified in this section? If you disagree, please explain why.

The EEA agrees with the key drivers of change in power system modelling requirements identified by the Authority. The growing penetration of inverter-based resources (IBRs) and the evolving dynamics of the power system indeed call for more sophisticated modelling approaches. These changes reflect a broader shift in the energy landscape, with greater emphasis on renewable integration, grid flexibility, and system reliability. Enhanced power system modelling is essential to effectively manage these complexities, ensuring resilience and stability as we continue the transition toward a more sustainable energy system.

Q2. (page 19) Are there any other drivers of change in power system modelling requirements which are not covered in this section? If so, please elaborate.

The EEA believes that the Authority has comprehensively addresses the key drivers influencing changes in power system modelling requirements. At this stage, we are not aware of any additional drivers that could further enhance this overview. However, we acknowledge that the sector is rapidly evolving, and emerging technologies or regulatory changes may continue to introduce new factors to consider in the future.

Q3. (page 25) Do you agree with the Authority's elaboration on the common quality-related information issue set out in this section? If you disagree, please explain why.

The EEA agrees with the Authority's elaboration on the common quality-related information issue outlined in this section. The lack of sufficient, reliable, and standardised information poses a significant challenge for network operators and owners as they manage an increasingly complex and evolving power system. Consistent access to quality data is essential to make informed decisions regarding network operation, maintenance, and investment, especially as new distributed energy resources (DERs) and demand response capabilities continue to integrate into the grid.

Quality data enables better load forecasting, asset management, and maintenance prioritisation, ultimately improving resilience and efficiency across the sector. We also support further efforts to identify specific data quality improvements and standardisation opportunities, as these can drive enhancements in operational and planning capabilities for the long-term sustainability and reliability of the network.

Q4. (page 25) Do you agree that the current provisions in the Code are insufficient to address the common quality-related information issue described in this section? If you disagree, please explain why.

The EEA agrees that the current provisions in the Code are insufficient to address the common quality-related information issue as described. We recognise the importance of network owners having access to consistent and accurate quality-related information from asset owners to maintain reliable and resilient network operations. The EEA believes that, alongside increased provision of common quality-related information at the time of DER connection to distribution networks, expanded access to smart metering data for distributors would play a vital role in supporting efficient network management and enhancing the quality of service for consumers. This improved data accessibility would contribute to a more proactive and effective approach to managing network constraints and optimising network performance, especially as distributed energy resources become more prevalent.

Q5. (page 25) Do you consider there to be any other aspects of the common quality-related asset information issue that are not covered in this section? If so, please elaborate.

The EEA appreciates the Authority's recognition of the need for enhanced visibility of behind-the-meter Distributed Energy Resources (DER) to address network quality and reliability concerns. We agree with the points raised regarding EDBs having little or no access to power quality data from the DERs' electricity meters but suggest expanding the scope of this issue.

The EEA believes that enhancing ongoing access to smart metering power quality data for distributors is crucial to addressing network security and performance risks on distribution networks.

Electricity Distribution Businesses (EDBs) currently have limited visibility into the operational status of DERs outside their direct control. This challenge intensifies as more DER connect to the grid and are potentially aggregated by third parties, such as aggregators who are not classified as Participants under the Code and are not bound by Good Electricity Industry Practice. With aggregators managing increasing volumes of behind-the-meter DER, there is a significant risk that distributors will lose further visibility into network activities. This lack of insight could hinder the ability of both EDBs and the system operators to maintain network security, performance, and stability across distribution networks.

We recommend that the Authority undertakes work to include the role of aggregators in the code. We also recommend that the Authority consider these additional aspects to ensure a comprehensive approach to managing the complexities associated with DER integration.

Q6. (page 30) Do you agree with the short-listed options presented by the Authority? If you disagree, please explain why.

The EEA generally agrees with the Authority's short-listed options, as they reflect a considered approach to addressing current challenges in the electricity sector. However, there are areas where additional consideration may enhance the effectiveness and practicality of these options. For example, while data sharing is certainly a critical component it is also important to ensure data quality, completeness, and standardisation of models shared among participants.

Additionally, we recommend further stakeholder engagement in finalizing these options, particularly to refine details around regulatory and economic feasibility. Ensuring broad alignment across the sector will help support smoother implementation and garner greater support from key players.

Overall, we support the direction but recommend refining the options to incorporate these additional considerations, which would enhance the value delivered to both the electricity sector and consumers.

Q7. (page 30) Do you have any feedback on the desirability of a document incorporated by reference in the Code specifying various common quality-related information requirements?

The EEA believes that a document incorporated by reference within the Code specifying common quality-related information requirements could offer significant benefits to the industry. Such a document could provide clear, standardised guidance on quality expectations, supporting consistency across various sectors of the electricity industry. This alignment would benefit all stakeholders by reducing ambiguity and enabling more streamlined and efficient compliance processes. However, it's essential that this document is developed collaboratively, ensuring it addresses the practical needs and unique contexts of each industry participant, from suppliers to network operators, and is adaptable to emerging technologies and evolving standards.

Q8. (page 30) Do you agree with the pros and cons associated with each option? What costs are likely to arise for affected parties (e.g., asset owners, network operators and network owners) under each of the options?

The EEA acknowledges that the pros and cons outlined for each option provide a reasonable foundation for evaluating potential approaches. The options aim to capture key factors affecting stakeholders like asset owners, network operators, and network owners. However, there are some assumptions that require refinement to be fully representative. For instance, in paragraph 5.21(a), the listed disadvantage assumes a competitive advantage for EDBs, yet many are community-owned, meaning any perceived benefit also flows directly to consumers. Furthermore, EDBs neither own nor operate generation assets, and therefore under the current rules, do not compete with third-party DER owners

or operators. Instead, access to this information will help EDBs fulfill their common-quality Code obligations while reducing investment in over-capacity network assets.

To better capture the complexity, we recommend a more nuanced approach that considers varying impacts based on regional network characteristics, asset conditions, and specific operational contexts.

Recognising these cost implications will allow for practical pathways to be identified for implementing options that support sector resilience, efficiency, and cost-effectiveness. The EEA is open to further collaboration to refine these assessments and ensure they comprehensively address the needs of all stakeholders.

Q9. (page 30) Do you consider any perceived conflicts of interest arising under the second and third short-listed options to be material in nature? If so, please elaborate.

The EEA acknowledge the importance of managing and accessing potential conflicts of interest to ensure the integrity and transparency of decision-making processes.

Under the second and third shortlisted options, we have reviewed any perceived conflicts of interest and determined that none are material in nature.

Q10. (page 30) Do you propose any alternative options to address the common quality-related information issue? If so, please elaborate.

Whilst the EEA does not propose any alternative options to address the common quality-related information issue per say, we suggest that the Authority should consider enhance the effectiveness of these options especially given the increasing complexity of integrating diverse sources of data across the electricity sector. For example, enhancing data accuracy, consistency, and accessibility will improve operational insights and support informed decision-making. Therefore, the Authority could consider ideas such as:

- Standardised Data Quality Framework: Developing a standardised framework for data quality across the sector can help ensure consistency in information gathering, processing, and reporting. This framework would provide guidelines on data accuracy, completeness, timeliness, and reliability, making it easier for stakeholders to trust and act on the information provided.
- Automated Quality Assurance (QA) Tools: Investing in automated tools that monitor and validate data quality in real-time would greatly reduce human error and the time spent on manual data checks. These tools can flag discrepancies immediately, allowing for prompt correction, and improve confidence in the data across operations and reporting.

- **Enhanced Training Programs:** Addressing quality issues often begins with the people collecting and processing data. Offering additional training focused on data integrity, collection practices, and quality control standards can reduce the risk of errors and ensure a more uniform approach across organizations.
- **Data Governance Structures:** Establishing formal data governance structures, including defined roles and responsibilities for data stewardship, can help maintain and improve data quality over time. This includes setting up processes for regular data audits and creating accountability for data integrity within organizations.
- **Feedback Mechanism for Continuous Improvement:** Implementing a feedback loop where data users can report issues back to the data providers creates a continuous improvement cycle. This mechanism allows providers to address root causes of quality issues promptly, fostering a culture of transparency and ongoing enhancement.

Q11. (page 32) Do you agree with the Authority's high-level evaluation of the short-listed options to help address the common quality-related information issue? If you disagree, please explain why.

The EEA generally agrees with the Authority's high-level evaluation of the short-listed options to address common quality-related information issues. We recognise the importance of establishing a consistent approach to ensuring the quality and reliability of information shared across the industry.

However, we believe there may be additional value in emphasising more specific guidance around data standardisation and interoperability. Standardised data formats and open data frameworks could further facilitate seamless information exchange between stakeholders, helping to maintain the integrity and accessibility of quality-related information over time.

Furthermore, while we support the broad criteria set for evaluation, it may be helpful to more explicitly consider the long-term adaptability of each option as data needs and quality standards evolve. This could ensure the proposed solutions remain effective as new technologies and data sources emerge within the energy sector.

Contact

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Appendix A

Introducing EEA

Founded in 1927 the EEA is the national organisation for engineering, technical and health and safety matters within the New Zealand Electricity Supply Industry (ESI).

Our members include over 70 Corporate Members (companies) and 600 Individual Members from all engineering disciplines and sectors of the electricity supply industry including generation, electricity networks (transmission and distribution), contractors (operation/maintenance), engineering consultancies and equipment suppliers.

The EEA works collaboratively with industry, government, and other stakeholders to provide expertise, advice, and holds or contributes to significant bodies of knowledge on engineering/ technical and safety issues relating to the electricity supply industry in New Zealand. All EEA guides and publications are publicly available.

A key focus of our work is enabling engineering and technology understanding and solutions to support decarbonisation and ensure the safe, reliable, and secure delivery of electricity to our communities.

Our functions include:

- Production and ongoing stewardship of 'bodies of knowledge' including engineering, technical, asset management and safety publications (e.g., guides, Standards, industry reports, and links to relevant legislation and international information).
- Representing the New Zealand electricity supply industry in national and international Standard development and facilitation of benchmarking in safety, technology, and asset management (e.g., IEC, AS/NZS, NZS Standards).
- Providing and supporting engineering and technical professional development and competency for our engineers/technical staff.
- Providing a web-based knowledge hub on safety, engineering, asset management, emerging technology and professional development including information services, notifications, newsletters, guidelines and support documents, events, and infrastructure engineering careers information.

The EEA is currently a partner with EECA and industry in the delivery of the FlexTalk programme which aims to maximise participation in flexibility services through the adoption of a common communication protocol. It also has membership on the Electricity Authority's Common Quality Technical Group (CQTG) and has observer status on the Authority's Network Connection Technical Group (NCTG).