

Submission on ‘Exploring network visibility: costs, benefits and value’

Submitter	Northpower Limited
What is your interest in network visibility?	Distribution network owner & operator

Introduction

Northpower welcomes the opportunity to provide feedback on the Electricity Authority’s (EA) ‘Exploring network visibility: costs, benefits and value’ discussion paper (**Discussion Paper**).

Northpower recognises that better visibility of the energy flows and power quality on distribution networks could have a public benefit, including for solar farm developers considering investment opportunities. However, to make the disclosures, distributors first require better visibility into their own networks. At present, some distributors have little to no network visibility beyond zone substations, which means that they cannot accurately identify capacity constraints and opportunities within their network. Therefore, improving distributors’ visibility into their own networks is a pre-requisite for the network visibility the EA is contemplating.

The Importance of Smart Meter Data to Network Visibility

Recently, Northpower made an investment that significantly increased our own network visibility. We purchased smart meter data. This is network operational data that gives measurements of voltage, current and phase angle take every 5 minutes at the customer’s meter. Smart meter data is the most cost-effective option to improve network visibility and understand energy flows and power quality on a distribution network.

At Northpower, smart meter data has brought multiple benefits, including:

- improved asset utilisation;
- better planning for load and voltage management;
- more efficient connection and management of distributed energy resources (**DER**);
- pro-active fault detection (an important safety benefit for consumers);
- more efficient outage management; and
- a better understanding of network load and voltage performance that will help us generate data for network hosting capacity.

Despite the above benefits, there remain several constraints associated with smart meter data. Northpower’s current arrangement provides access to data relating to only

around 60% of our network, with no visibility of our large commercial and industrial customers. There are also restrictions on the ways we can use smart meter data. However, the benefits of network visibility have outweighed the costs, and we are now in a better position to gather network information and make disclosures to customers, despite the restrictions.

To promote network visibility in a cost-effective manner, we encourage the EA to make it easier for all distributors to access smart meter data and to remove restrictions and clarify within the Electricity Industry Participation Code 2010 (**Electricity Code**) on the way smart meter data can be used. Assistance by the EA to remove these barriers will unlock further opportunities, benefit distributors, and make it easier for distributors to provide network visibility to access seekers, flexibility providers and other interested parties.

Issues where the EA can intervene to improve network visibility include:

- **Availability of smart meter data.** Metering equipment providers (**MEP**) are not required to produce smart meter data and make it available to distributors. The availability of smart meter data to distributors depends on which MEPs are providing metering services on their network.
We encourage regulators to require MEPs to provide smart meter data to distributors, as has already happened in Australia.
- **Data standardisation.** Unlike Australia, New Zealand has no statutory or regulatory definition for smart meter data (e.g. voltage, current, phase angle, meter events), no specification of how it is gathered (e.g. instantaneous readings every 5 minutes), and does not specify how frequently the data is batched and delivered by MEPs to their customers (e.g. every 24 hours, every 6 hours, every 4 hours, every 20 minutes). Near real-time smart meter data is important for operations, for example congestion management and faults identification. We encourage regulators to define smart meter data, providing certainty around the compatibility of data purchased from different MEPs. A definition of smart meter data in the Electricity Code also brings the opportunity to clarify the relationship between smart meter data and consumption data. In particular (as highlighted in the point below), industry participants would benefit from the EA clarifying the applicability of Electricity Code Part 12A, Appendix C in relation to smart meter data.
- **Combination with consumption data.** Our interpretation of Part 12A Appendix C of the Electricity Code is that it significantly constrains distributors' ability to combine consumption data with any other data sets. This prevents distributors using consumption data as a 'gap-filler' for parts of their networks in which smart meter data is unavailable. This would be particularly useful for

commercial and industrial customers, for whom smart meter data often is not available, but where half-hourly consumption data usually is available.

We encourage regulators to provide greater clarity and amend Part 12A of the Electricity Code enabling distributors to combine consumption data with smart meter data for the purposes of network planning and management.

- **Data coverage.** MEPs who produce smart meter data may choose to only produce it for a subset of their meters. For example, an MEP may choose to gather smart meter data from meters used by residential customers only and not from meters used by larger commercial and industrial customers.

We encourage regulators to include all customer and metering types in the scope of a requirement for MEPs to provide smart meter data to distributors. This will help to provide full network visibility.

- **Commercial terms.** MEPs impose contractual terms on distributors that restrict the use of smart meter data. These restrictions reduce the benefits by effectively ruling out some use cases, e.g. operational management of small-scale DER.

We encourage regulators to amend default distributor, MEP and retailer agreements authorising MEPs to provide smart meter data to distributors, who are in turn, authorised to use the data without restrictions for network planning and management purposes.

- **Privacy principles.** There is uncertainty within the industry as to how the requirements of the Privacy Act 2020 restrict use and disclosure of smart meter data. To date, Northpower has taken a conservative approach, which restricts our ability to benefit from smart meter data.

We encourage regulators to consider the application of the Privacy Act 2020 to smart meter data to provide clarity to industry participants and advocate for legislative change where appropriate.

Response to Discussion Paper Questions

Questions	Comments
Q1. Are you aware of the extent of the information currently being provided by distributors (including through disclosures)?	Yes
Q2. How do current distributor disclosures support your understanding of available capacity, constraints and opportunities on: a) high-voltage networks?	n/a

b) low-voltage networks?	
Q3. How are you making use of existing disclosures to support more efficient outcomes?	n/a
Q4. Would changes to the type of data, format, regularity or granularity of distributor disclosures better support decision-making? Please provide detail.	n/a
Q5. What other disclosures of network information would further inform your choices and decisions?	n/a
Q6. What are distributors' perspectives on the value of collating and publishing network capacity information for their own businesses?	<p>We believe publishing network capacity information benefits us and our customers. Publication network capacity information reveals the most desirable locations for connection, encouraging efficient use of network assets. Customers self-discover information, saving time for them and us. This encourages DER connections, which aligns with our goal to keep up with changing customer behaviour and integrate new technology. We also expect our network capacity information to be frequently accessed by Northpower staff, reducing our internal costs. With the same goals in mind, we also support distributors publishing information about known future changes to network hosting capacity - network upgrade projects affecting hosting capacity, and the pipeline of approved final projects awaiting connection to the network.</p>
Q7. What are distributors' perspectives on how well interested parties are using the data they already publish?	<p>Current disclosures are insufficient for solar farm developers and charge-point operators looking to invest in Northland. They are requesting more detailed network capacity information and the ability to self-serve.</p>
Q8. What are your perspectives on recent developments on access to smart meter data?	<p>Distribution businesses still face difficulties accessing smart meter data. Some MEPs offer smart meter data on commercial terms, which may be unfavourable to distributors and impose restrictions on data use.</p> <p>The regulator could assist distributors by: requiring MEPs to make smart meter data available in standardised formats and on reasonable terms; addressing the issues which are restricting uses of smart meter data.</p> <p>See 'The Importance of Smart Meter Data' above.</p>
Q9. Is the pace of distributor progress on developing the	n/a

capability needed to support work on improving network visibility appropriate? If not, what are your expectations regarding timeframes?	
Q10. What are the barriers and costs to distributors in developing the capability needed to support work on improving network visibility faster?	Smart meter data is the most cost-effective way to achieve network visibility. However smart meter data is unavailable for around 40% of our network, including our largest customers. See 'The Importance of Smart Meter Data' above.
Q11. Do you agree that distributors having a better understanding of network capacity/constraints and publishing this information in an easily accessible way is in the long-term interest of consumers?	Yes.
Q12. Do you consider that there is a case for further regulatory intervention to further improve progress and the quality (e.g. timeliness, granularity, format standardisation) of disclosures that improve network visibility?	Yes. By working with access seekers and other interested parties, regulators can identify and standardise data presentation formats that are fit for purpose. Regulation also provides certainty around time frames and that network data will be published NZ-wide.
Q13. Do you consider that measures are needed to improve awareness of and encourage use of network visibility disclosures by interested parties?	n/a
Q14. If further work is required to support the development and use of network visibility, which approach do you prefer: a) developing industry guidance or standards. b) introducing a regulatory backstop that would codify the industry guidance or standards. c) developing regulatory standards and timeframes for improving network visibility. d) something else.	
Q15. Do you support an approach that focuses on high-voltage	Yes. We expect HV information to be the easier type to gather and publish for most distributors.

networks first, or do you have another preference?	We are in a position to publish information on HV networks as well as some LV network information.
Q16. What other aspects of international developments relating to network visibility should we be looking at for lessons that could be considered in the New Zealand context?	Australia AEMC Rule Change “Accelerating smart meter deployment”. Defines smart meter data “basic PQD” and gives distributors access to it.
Q17. Do you consider that metering equipment providers should be required to publish schedules of available data and prices to improve transparency and reduce transaction costs?	Yes.
Q18. Do you consider that elements of Part 12A of the Code relating to default distributor agreements should be reinforced or extended to ensure consistent access to both consumption data and other types of data e.g. power quality from smart meters or other devices (such as inverters)?	Yes. See ‘The Importance of Smart Meter Data’ above.