POWERCO

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Electricity Authority
By email: distribution.feedback@ea.govt.nz

Tēnā koe,

Network information – Enabling customer and industry decisions through transparency

We welcome the opportunity to respond to the Electricity Authority (**Authority**)'s discussion paper on exploring network visibility. To enable future distribution system operation, Powerco is committed to publishing network information for the benefit of our customers and access seekers. We have already made advances (distributed generation and demand capacity maps) but are looking at options for significantly improved data access.

Publishing network capacity data is a prime example where an improved approach across Electricity Distribution Businesses (**EDBs**) is justified, and we encourage the Authority to work with other regulators and EDBs on an approach to achieve what customers are looking for. Our summary observations on this consultation are:

Customers will benefit from consistency	• Customers have different experiences in accessing information and data about electricity network capacity. There is potential to provide significant customer benefit with clarity and consistency in network information and customer interface. • There are already significant information requirements for EDBs. New requirements will need to be designed with care to avoid duplication or inconsistency, while achieving customer value.
Visibility can improve in steps	• All EDBs have data to manage their network. The form of this, systems to share data and customer interfaces vary across EDBs. With EDBs at different stages of digitalisation and data visibility, a staged approach will assist all networks to continue to improve data offerings, with options for levels of data made available. • Achieving data visibility can be complex and resource intensive. Designing solutions aligned with what the EDB's customers want, and accounting for customer value, is therefore important.
The optimal solution should be directed by customers	• Customers, access seekers, developers, potential industry participants – are the people who know what data and format is needed to improve their relationship with EDBs and inform their decisions about network connections, investment or use. • Further work is required to identify what customers need and understand their priorities. It would not be appropriate for the Authority to direct this without fully understanding the customer segments, options, and value of those options. A one-size-fits-all solution will not meet customer needs.

We provide further comments on these observations in the attachment and link them to the Authority's consultation questions in section 4 below.

We are always keen to meet with the Authority to discuss and develop the ideas in our submissions. In the meantime, if you have any questions, please contact Irene Clarke █████████████████████████

Nāku noa, nā,

Emma Wilson
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POWERCO

1.   A consistent approach by EDBs will require direction

For Powerco, transparency and sharing of data is part of delivering our customer commitments.[1] Customers and access seekers are looking for accessible and useful network information, and an easy interface with the EDB. Part of meeting our customer commitments is to share this information. Customer value will not necessarily be accounted for in an internal business case looking at cost/benefit for publishing network visibility maps (for example) but for Powerco, customer commitments are a primary driver.

Given customers and access seekers have different experiences in accessing information and data about electricity network capacity, there is potential to provide significant customer benefit with clarity, standardisation and consistency in network information available. Progress can be delivered by agreed standards or regulation. EDBs have been working collaboratively on approaches to improve network visibility, and this process has illustrated that EDBs are at different stages in developing visibility.

If the approach of EDBs is considered inadequate or too slow, clearer expectations and timeframes could assist with consistent approaches and improving network visibility over time. This may require more formal intervention to meet access seekers' expectations.

Network visibility is one component of the digitalisation of New Zealand's electricity system. This brings uncertainties, opportunities and a requirement for new capabilities in network management. There are costs, and this goes beyond smart meter data which the discussion paper focuses on.

We support regulatory intervention if it is to protect customers and support the energy transition where barriers exist. However, it is not yet clear how this would integrate with existing regulation and initiatives, and how this would be targeted for consumer benefit (the outcomes and customer interface) rather than the EDB data systems (the inputs). Further evaluation and transparency is required on the cost/benefit evaluation of regulatory options to direct changes to digital systems and interfaces, including assessment of customer value.

Powerco is committed to continued improvement in visibility of our network information. This will progress notwithstanding industry standards, regulation or other options to codify network visibility.

2.   A staged approach will support implementation

There are significant differences across EDBs in the levels of data that are, or could be, shared digitally. A staged approach with milestones would assist in improving capability across the sector, lifting performance but providing scope of EDBs to deliver options over time. For example, options from limited to comprehensive data access, and from standardised to more bespoke approaches.

Our experience is that some customers are looking for standard network capacity information at a substation level, while others are looking for raw data they can process and analyse themselves. Others are not looking for data at all, but seek a clear interface that optimises use of network data to meet a customer task, eg automated connection process at a specific location.

Options and staging for delivery of different needs of customers may simply be focusing on the high voltage network first. There are also a range of options for types of information and interface processes.

We consider static visibility maps to be a minimal expectation in information sharing. EDBs could be incentivised to be ambitious, over time, to deliver real customer value through information sharing.

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[1] Powerco customer commitments: https://www.powerco.co.nz/what-we-do/customer-commitments

3. The outcome must be informed by customers, not the Authority, other government agencies or EDBs

The issue and outcome is about more than 'network visibility'. Rather, it is about data that better supports customer decision making. Identifying the information of most value to customers, will be a combination of EDB product knowledge and feedback from customers on benefit.

Systems and processes for EDB data management can be complex and resource intensive. Digital capabilities are transforming what is both possible and expected by customers. A capital outlay is inevitable, but internal efficiencies would likely outweigh this cost. With appropriate digital infrastructure in place, the incremental cost of providing information (both data and services) that meets customers' needs, could be relatively low. The existing systems, and complexity of sharing data, vary amongst EDBs, for example depending on their internal network planning, automation, flexibility engagement and scale.

Customer benefit is not only about data access but relationships between EDBs and customers, and the engagement about the data.

The needs of customers and access seekers are fundamental to any direction on EDB data accessibility. We consider that these needs are not adequately identified yet to draw conclusions on changes to the information disclosure requirements or other interventions to set minimum requirements or approaches for all EDBs in sharing network data. The work already underway by ENA (Customer Journeys, and Network Visibility) will be informed by stakeholder input and may help identify gaps in necessary interventions.

At this stage, interventions to require a specific approach to network visibility would be misdirected and likely impose more cost than benefit.

4. Responses to the Authority's questions

We have responded to the questions in the Authority's discussion paper in the table below.

Question	Comments
Q1. Are you / stakeholders aware of the extent of the information on network visibility currently being provided by distributors?	We are aware of the information, and consider that this is driven through both existing regulatory expectations (eg disclosures) as well as improving digital interfaces and customer delivery. Customers and access seekers are likely less aware of the information currently available, or how to apply it to their decision making. Disclosed information is generally too high level (non-locational) to be of value or interest to access seekers, and this is why stakeholder engagement to understand what is of value, is a critical next step.
Q2. How do current distributor disclosures support the understanding of available capacity, constraints and opportunities on: a) high-voltage networks?	a) High-voltage networks HV is the key area where there are requirements around identification of capacity and constraints. The Information Disclosures require identification of indicative metrics for capacity and constraints, but this is only disaggregated to zone substation level. This is of limited value to most access seekers.

Question	Comments
b) low-voltage networks?	The Code requirement to publish known areas of DG (export) congestion is also not providing information at a level of value to customers. Recent Part 6 code changes will require capacity information at lower levels of disaggregation (feeder and some distribution transformer), but only to the degree that this is available already. Information disclosure 2.3.13 also requires publishing a map of the ten largest opex and capex projects, linked to constraint drivers. b) Low-voltage networks In comparison, requirements about low voltage network capacity is currently qualitative. ID 17.2.1 asks for the approach to voltage monitoring, and progress in load and generation constraints. While quantitative measures are not yet required for the LV network, Powerco and some other networks are developing capabilities for this. ID 17.4.5 also asks for a description around sharing of forecast constraints for future customers.
Q3. How are interested parties making use of existing disclosures to support more efficient outcomes?	The data for Powerco's disclosures is a by-product of the information we use for network planning, operation, connection and asset management processes. Powerco does not use the disclosure information, as such. With its focus on regulatory compliance, the disclosure information is not a primary source for the locational information access seekers are looking for. Sharing relevant information is important in engaging with our customers and supporting their decisions on energy options both at time of connection and their ongoing use. To achieve efficiency in data disclosures, the requirements need to be clear, consistent and respond to the needs of customers (including access seekers) in the most cost-effective way.
Q4. Would changes to the type of data, format, regularity or granularity of distributor disclosures better support decision-making? Q5. What other disclosures of network information would further inform choices and decisions of access seekers and other interested parties?	While some of the Commerce Act information disclosures are relatively new to draw conclusions on changes to the ID requirements, Powerco is informed through customer feedback on our own approach to sharing network information. We have seen both load and generation connections to the distribution network increase significantly in recent years, and changes in ongoing network use requirements. This is only expected to continue to increase with growing electrification, customer energy resources and management of flexibility. However, there is also increasing distinction between the need for capacity data vs constraints data, and distinction between data needs of mass market customers vs large access seekers vs other industry participants which have different decision-making needs and different capacity to manage complex network data.

Question	Comments
	Changes to the type and format of data is likely to better support customer decision making. The needs of access seekers are not adequately identified yet to draw conclusions on necessary changes to the information disclosure requirements. Distributors should be incentivised (rather than obliged through a standard disclosure) to provide the right balance of information and services considering their own customers' needs and decisions.

The types of data could cover:
• Capacity & congestion - Capacity (DG & load) for new connections; congestion (DG & load) for flexibility providers
• Granular or locational - critical to cover HV network (down to Distribution Transformer for commercial customers)
• Time variant - eg seasonal, weekday, daily profiles. Critical to supporting flexible connections
• Forecasts of above - investors need data on future value of their investment, not just current state
• Congestion - ideally monetised for flexibility value.

The form of publication needs to respond to customer needs. For example, map based approaches are useful for presenting a small subset of network information visually where the customer may have connection point options (eg a charge point operator). The map also provides ease of navigation rather than using complex network IDs or names. However, a map does not serve customers / consultants needing more metrics or bulk data or wanting to interpret data for a particular decision.

The needs of customer segments will vary. How the data integrates with the distributor's customer service applications will also vary. For example, Powerco intends to integrate information with our customer service web facing applications used for decision processes such as connection forms.

An adaptive approach will be necessary as distributors progress their data sharing approach suited to their own circumstances. |
| Q6. What are distributors' perspectives on the value of collating and publishing network capacity information for their own businesses? | For Powerco, transparency and sharing of data is all part of our customer commitments. Access seekers are consistently looking for accessible and useful network information and it is part of our role to share this information.

EDBs looking to implement risk-based investment planning (eg probabilistic) must undertake a digital transformation, supporting big data management, integration, modelling and automation. With these foundational digital capabilities in place, it is minimal additional cost or effort to produce capacity and congestion information supporting external stakeholders. The customer value of collating and publishing this data will increase as additional components are included, such as daily profiles or forecasts. |

Question	Comments
	In our changing electricity operating system where orchestration of DER and flex becomes more important, transparency in network constraints will be fundamental so all market participants understand the situation and potential opportunities to respond. We are aware that distributors see different levels of value in, or need to, share this information. Or have different levels of capability to produce systems and tools for sharing or publishing information. The ENA FNF has been facilitating work across EDBs to assist a shared understanding in value and priorities for information sharing with access seekers.
Q7. What are distributors' perspectives on how well interested parties are using the data they already publish?	Solar developers and charge point operators have provided positive feedback about Powerco's capacity maps, particularly to assist in the early site assessment process and confirming whether to progress an application in a specific area. Powerco's account managers have also found that our capacity maps are used by customers or their consultants as a starting point for a conversation with Powerco, or provide an easy way for the account manager to engage in a location-specific conversation. We are aware of frustrations with national developers in the inconsistency in approach across EDBs with publishing capacity and constraints information. There is a balance in a consistent standardised approach suited to some customer segments vs more EDB-specific approach suited to other customer segments and interfacing with the EDB's digital processes such as connection approval. We are gathering website analytics on our published information and tools and using it to inform our future developments.
Q8. What are stakeholders' perspectives on recent developments on access to smart meter data?	Smart meter data access is improving but still requires bi-lateral contracts between MEPs (such as Bluecurrent) and carries a high cost. The process for agreeing data access can be time consuming and complex, and each EDB is doing this independently. The recent survey from the ENA found most EDBs are paying $3-5/ICP/ annum. Our experience is it can be more than $5 per ICP for consumption and Power quality data sets, and the cost increases each year. This may not sound like a high cost at an ICP level but with Powerco's almost 360,000 ICPs, this cost becomes a significant opex item if required annually and would be the same for other EDBs proportionately. The three types of smart meter data available (consumption data, power quality data, and event data) are separable and contracted differently, with cost variance depending on the data supplied.

Question	Comments
	It is not clear the extent of the Authority's review of the type and cost for access to data, or if this is focused on consumption data only. We do not agree with the conclusion in Appendix C of the discussion paper that "the price being charged for this data is reasonable for now".
	We support the work to develop the consumer data right for electricity, in providing individual consumers better access to their data. This initiative however does not assist distributors with network level data access or sharing.
	We comment on smart meter data access further in question 18.
Q9. Is the pace of distributor progress on developing the capability needed to support work on improving network visibility appropriate? If not, what are access seekers' expectations regarding timeframes?	The development of network visibility varies across EDBs currently, and this reflects different capabilities and priorities. There has been progress in the last few years with improving network visibility, and various projects (eg through ENA) to share approaches and tools between EDBs.
	If the pace is considered inadequate, clearer expectations and timeframes could assist with consistent approaches and improving network visibility over time. This may or may not require regulation.
	There are significant differences in the levels of data that could be shared. A staged approach with milestones would assist in improving capability across the sector, lifting performance but providing scope of EDBs to deliver options from limited, to comprehensive, data access, and from standardised to more bespoke approaches. These differences may reflect the different needs of customers on the high voltage vs low voltage networks.
Q10. What are the barriers and costs to distributors in developing the capability needed to support work on improving network visibility faster?	The largest barriers to improving network visibility are a mixture of:
	1) **Maturity** of metering equipment provider (**MEP**)s. There are currently 20 MEPs across our footprint (although 2 control most of our meters)
	2) **Cost**. As mentioned above, procuring smart meter data is around $5/ICP/annum. Installing our own monitoring at distribution transformers translates to an equivalent of $30-100/ICP (capex). Add to this the cost to develop and implement tools and systems to produce and publish information (which is integrated with the EDB's systems). A number of EDBs, including Powerco, received a significant opex step change[2] for DPP4, recognising the significant shift in digital costs and expectations with LV monitoring compared to 5 years ago.
	3) **Capability.** Developing the systems and maintaining them may not be within the current capability of EDBs, and may be difficult for smaller EDBs. Capability targeted just at producing publishable network visibility

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[2] For Powerco, this step change was over $16,000,000 for the DPP4 period

Question	Comments
	information may not be considered justified, although should be part of developing capability in digitalisation more broadly. There may be uncertainty of the capability required to implement the systems and manage customer queries. 4) **Uncertainty**. There may be a fear in miss-use of the network data. Level of damages and/or indemnity is uncapped (in extreme cases potentially tens of millions of dollars). There is no standardisation in cross-industry data exchange protocols or interfaces.
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?	Sound understanding of capacity/constraint is essential for EDBs network planning and operations. Having this understanding is core business for EDBs and always has been. The change is the tools, technologies and data available to analyse network capacity, particularly for the LV network. Publishing the information provides value to our customers, or potential customers, who are access seekers. It also provides value to other participants or potential participants in the market such as DER and flexibility providers. It is a tool to support the relationship between EDBs and customers. Different information, and different means of publishing it need to be considered for each customer segment suited to their needs and technical capability. Tailored information services (applications, tools etc) may be more suitable to less technical mass market customers, while commercial customers and their consultants may prefer to bulk download complex industry commercial and technical data to undertake their own analysis. Powerco's first prototype HV capacity information was published in a map form, which was ideally suited to the mass market customer segment targeted (non-locational CPO and utility DG). The map visualisation approach does not necessarily scale with exponentially more data (time profiles, forecasts, scenarios) at each network location. In future, the map may simply become a mechanism for a user to navigate to the point of interest on the network from which options might allow either simple or complex engagement. A one-size-fits all solution is not in the long-term interest of consumers.
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	Intervention or agreed industry approaches would assist with consistency and progress across all EDBs. Implementation of existing disclosure requirements and progress with industry work on network visibility (through ENA) may deliver the desired outcome. We support regulatory intervention if it is to protect customers and support the energy transition where barriers exist, but it is not clear how this would

Question	Comments
standardisation) of disclosures that improve network visibility?	integrate with existing regulation and initiatives, and how this would be targeted for consumer benefit.
Q13. Do you consider that measures are needed to improve awareness of and encourage use of network visibility disclosures by interested parties?	With the right digital services available for customers and the complementary customer service, awareness is likely to grow over time. We do not consider that encouraging use of network visibility disclosures is the objective. Rather EDBs should be providing the interfaces that customers can easily engage with for their business task, without them needing to understand all the complex data that sits behind it. We need to understand the different customer segments and what they need, in order to provide the right interfaces and data. Powerco's HV capacity information is testing and refining this for our local customer audience. The ENA is also working on standardising customer segmentation.
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.	Consistency, standardisation, and progress will be assisted by agreed standards or regulation. EDBs have been working collaboratively on approaches to improve network visibility. This has illustrated that EDBs are at different stages in developing visibility. Regulatory standards will be required if desired timelines or access seekers' expectations are not achieved. We consider there could be some risk in prescriptive regulation interrupting the market that is already developing around network information. There is also a risk that requirements set by regulation are at a low level to suit the industry as a whole, rather than a high level to suit customers. Guidance or standards as a first step could assist in setting a path for stepping up delivery of interfaces over time. This should focus on outputs, format and means of communication with customers, rather than data inputs. Incentives could provide a useful means of driving improved performance. Powerco is committed to continued improvement in visibility of our network information. This will progress notwithstanding industry standards, regulation or other options to codify network visibility.
Q15. Do you support an approach that focuses on high-voltage networks first, or do you have another preference?	The high voltage network is a focus for EDB network planning due to the investment and customer implications if there is a mismatch between capacity and load. Traditionally network data quality is better across the high voltage network. While there is an increasing amount of interest at the low voltage level, and most customers connect here, and energy use is changing here, it is the high voltage network which is the priority for improved network information. Development of grid scale distributed generation at the high voltage level far outpaces residential rooftop solar at the low voltage level. Large access

Question	Comments
	seekers are generally seeking access to the high voltage network, and it is here that visibility of constraints is more critical.
Q16. What other aspects of international developments relating to network visibility should we be looking at for lessons that could be considered in the NZ context?	As well as the Australian examples referenced in the discussion paper, the UK approach should be reviewed. Powerco is working towards a similar system with a focus on connected communities (eg automatic connections process).
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?	Transparency is encouraged, and publishing MEP schedules could assist EDB's knowledge as they pursue individual arrangements with MEPs. However, the impact of publishing these schedules is likely to be minimal as a small number of meter equipment providers currently have a monopoly on some datasets e.g. 5-minute NOD, so most EDBs will not have an alternative to obtaining the data (unless they install their own monitors or ICP meters). Publishing the schedules would be unlikely to affect prices.
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)?	We caution against changing the DDA. Any changes to the DDA create significant compliance cost for the industry and we do not think this would be an effective tool to address access to data. With the different MEPs, capability and interchangeability of data is at different levels. A determination or guidance could assist considerably in setting common expectations for contract, billing, data delivery/interchangeability, and even defining what smart meter data is and its frequency. Without this, access to smart meter data will continue to be sporadic and inconsistent between EDBs and MEPs. Power quality data is complicated as a separate contract and being a separate category from consumption data for which EDBs carry responsibilities. The fully commercial market this power quality data sits in will make it more difficult for EA to intervene. Consistent access to smart meter data is in the long-term interest of consumers. For example, it provides opportunity for reduced outage timing, and for operating closer to utilisation limits (through greater certainty of real time loading at a granular level).