



Submission on Exploring network visibility

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1 Submission and contact details

Consultation	Exploring Network Visibility
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2 Confidential information

There is no confidential information provided in this submission. This submission can be publicly disclosed.

3 Introduction

WELL welcomes the opportunity to discuss the future of network visibility. Our main concern is that the current expenditure allowances do not include flexibility to fund the additional administration to cover any additional information disclosure requirements. The Authority should consider engaging with the Commission on a regulatory reopener if changes are progressed.

We would welcome further discussion from the EA on the points raised within this submission.

4 Consultation Questions

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

At the LV level, networks are typically recorded within Geographic Information Systems (GIS), which capture conductor sizes and street-level connection points. Engineering models use this data to calculate expected voltage levels using After Diversity Maximum Demand (ADMD) figures for a representative home size. Because conductor sizes and loading conditions change progressively away

from the supply point as connections diminish, there is no single “capacity” value that can be accurately or meaningfully published. Any attempt to represent this as a single number would be misleading, as LV capacity is inherently location-specific and dependent on both network topology and local demand conditions.

At the HV level, a more general indication of available capacity can sometimes be derived. For example, for a radial spur line, capacity could be expressed in terms of how many additional distribution transformers could be connected within the remaining current-carrying capability of the conductor. However, for meshed or interconnected HV lines that provide supply security, this calculation becomes more complex. Maintaining current service levels and reliability performance (as disclosed to the Commerce Commission against performance targets) requires that a proportion of network capacity be reserved. As such, the “residual” capacity that could be published would be constrained by reliability and security considerations and would not necessarily represent firm hosting potential.

In practice, capacity is not a standard operating parameter routinely held or published by an Electricity Distribution Business (EDB). When assessing a new or changed load, distributors undertake a specific load flow analysis to determine the impact on the existing network configuration. This process provides an accurate, case-specific assessment of available capacity rather than relying on static or averaged values.

Moreover, EDBs generally do not have access to detailed metering data that would enable comprehensive visibility of LV network demand. At the HV level, distributors monitor certain points from SCADA telemetry of substation circuit breakers for current loadings to ensure downstream equipment (cables) operates within rating limits, particularly for older assets which have derating factors applied. Where cable systems have condition-based or age-related constraints, operational limits may vary seasonally. In these cases, there may be no practical capacity available during higher-demand periods unless additional investment is made to increase capacity.

Where distribution transformers are being considered for additional demand then data loggers are added to assess current demand and what available capacity is available. As we do not have installed LV telemetry, we must make these readings by installing field devices to obtain the operational LV data. This data is not available from Smart Meters as these devices record half hour energy consumption rather than the demand information to determine capacity availability.

For these reasons, while EDBs recognise the potential value of network visibility to support electrification, distributed energy resources, and planning coordination, the practical value of

publishing generic capacity information for internal purposes is limited. More meaningful outcomes are achieved through targeted data sharing, collaborative planning processes, and scenario-specific analysis rather than static or generalised capacity maps.

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

The most interest in data we publish is from Outage Check an App which notifies estimated restoration times for our feeder faults, developers prefer one-to-one discussions to navigate connection processes for subdivision or commercial developments where we can discuss Price-Quality trade-offs. This suggests that additional publication alone will not drive efficiency. Before expanding disclosure requirements, we encourage the Authority to work with stakeholders to identify specific data gaps and provide guidance on how to use existing information.

Q8. What are your perspectives on recent developments on access to smart meter data?

Access to smart meter data has improved, but it is not a panacea. Initial work with Are Ake innovation project (ref report) found that SM data was of insufficient quality and quantity to complete the exercise of identifying EV locations within the LV network. Smart meter data continues to come with significant costs that are beyond the marginal cost of handling. There is also no thought given to the size of the information systems to store this data as well as the loss of data value due to the requirements to anonymise to ensure privacy. Smart meters can provide consumption and some power quality data, yet the timing and granularity vary by metering provider. There are only 40% of retailers able to supply SM data and it would be expected to take a number of years for the remaining Retailers to agree data sharing agreements. Negotiating access and ensuring privacy compliance introduce cost and complexity. As noted in WELL's previous submission, distribution networks currently lack visibility of where large devices such as EV chargers are connecting. While smart meter data can help, it is not sufficient to fully understand LV constraints.

Q9. Is the pace of distributor progress on developing the capability needed to support work on improving network visibility appropriate? If not, what are your expectations regarding timeframes?

WELL have modelled the LV network and undertaken scenario planning to outline areas where congestion will start to occur. This does not require continuous access to SM data or investment in large IT storage systems. By publishing the congestion heat map, then we have met the requirement of showing network visibility. Given current funding arrangements, progress is reasonable. The Commerce Commission's pricequality regulation does not explicitly fund widespread LV monitoring, and distributors must prioritise investments that benefit all consumers. Accelerating progress without

additional funding would divert resources from core reliability projects. Access seekers will see areas which are not congested, however this does not guarantee there will be no further network reinforcement requirements as this will be demand dependant. However if a residential connection is to be made in an existing residential area, then this would likely require a straight forward approval. A request for a 1MVA connection in a residential area will require a load study to determine the investment. We caution against unrealistic expectations. A phased approach—testing highvoltage data publication first—allows the value case to be demonstrated at lower cost.

Q10. What are the barriers and costs to distributors in developing the capability needed to support work on improving network visibility faster?

The main barrier is the DPP does not allow for the additional opex for the additional services required. We remain unconvinced that network visibility creates a problem to the degree it has been discussed. The cost to employ staff to monitor the LV system has not been included in any benefits analysis nor has the requirement for understanding of the data, data storage and data security. This requirement seems to be predetermined and driven by a narrow sector which takes away the ability to innovate other solutions which are more affordable and more in keeping with the long term benefit of customers. Where CPO's have requested key site locations but there was not the network capacity available this has changed to a more sensible discussion on size of Charger and time the network has what capacity available. This information is already available for the HV network. The primary barriers are the capital cost of LV monitoring equipment, integration of disparate IT systems, and ongoing operational costs. Furthermore, price-quality regulation is largely based on historical spending and may not recover new digital investments. Without clear costbenefit justification or funding mechanisms, it is difficult to justify rapid deployment of network visibility tools. Should this become a mandated requirement then WELL would benchmark costs from other network installations and put these costs through as part of a CPP application so that it is adequately funded from a capex and opex perspective.

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?

The benefits of this approach falls only to a narrow sector of commercial operators which is a cross-subsidy drawn from existing customers. Customers will have very little interest in the published data unless they are operating a commercial enterprise. This does bring into question why customers who are already connected benefit from this information when WELL will be taking other steps to publish

network performance for the small number of congested areas. Specifically, modelling has shown, only 200 of the 4500 transformers will be congested in the next reset period. It does not seem sensible to obtain data for the whole network when the area of interest has already been identified. The case for widespread publication is uncertain. The discussion paper lists potential benefits, but these hinge on stakeholders' ability to use the data effectively. We agree that publishing accurate, meaningful information can support efficient investment, yet we are cautious about mandating publication of data that is incomplete or expensive to collect. The long-term interests of consumers are best served when the costs of data collection and publication are justified by demonstrable benefits.

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?

Any intervention must be proportional to the benefits and to the increased costs sought through a CPP or reopener process. The gap in the regulatory analysis is there is no addition to the price path allowance for the additional opex. This forces innovation to define alternative approaches which do not follow the EA's intended course of action. Taking a regulatory position on a single course of action which prevents cheaper alternative options does not seem sensible. We do not believe that this is the case with the currently proposed path, particularly in light of already mandated disclosure requirements. Additional regulation could standardise formats and improve comparability, but it could also impose significant cost with limited value. WELL favours a collaborative development of voluntary industry guidance, with regulators monitoring progress.

Q13. Do you consider that measures are needed to improve awareness of and encourage use of network visibility disclosures by interested parties?

No we think there are alternative methods which provide a simpler and cheaper cost structure than what the EA is recommending. We agree that education should precede further disclosure mandates. If stakeholders are not using existing data, the first step should be to improve awareness and provide guidance.

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 Exploring network visibility: costs, benefits and value 26 the industry guidance or standards. c) developing regulatory standards and timeframes for improving network visibility. d) Something else

Option (a) – developing industry guidance and a roadmap remains our preferred approach. It allows for innovative solutions which may be least cost to customers. The sector could identify higher value datasets and test disclosure practices before regulation is imposed. It also allows for management of additional costs over time. Focusing only on a datasource as a means of regulation without a full study of the benefits from the EDB investment will create a suboptimal solution.

Q15 Do you support an approach that focuses on high-voltage networks first, or do you have another preference?

Yes. Focusing on high-voltage networks leverages existing data and allows the Authority to pilot disclosure without the high costs of LV monitoring

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?

The international experience is strong in this area, however NZ have elected not to follow several of the prerequisites which would have unlocked greater value for customers.

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?

There needs to be an agreed data standard so we get consistent information which provides reliable decision making. Initial datasets were incomplete and the sister companies system rejected the files because of missing records and incomplete information files. This outlines that rushing into a preconceived outcome with no management of the inputs will not deliver the desired outcome and become very expensive for the customer to pay for the reworking costs. Publishing data schedules and pricing would improve transparency and could lower transaction costs, provided the schedules meet an agreed quality standard. Prices for data should be limited to marginal cost.

Q18. Do you consider that elements of 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)?

Enhanced provisions could clarify that distributors may request and receive power quality and voltage data, not just consumption data, and at reasonable (marginal) costs.

There is benefit in inverter visibility, however the lack of regulatory guidance to make this a connection requirement means we have lost this opportunity.

Regulating the output (data) does not afford the management overseas networks are getting by making mandatory management of the inputs (inverters). This is a missed opportunity which will not be retrieved.

For better power quality outcomes, the data rules should also require realtime data for network management which will have larger benefits to customers than available capacity.