251 Racecourse Road, PO Box 1642,
Invercargill 9840, New Zealand
P: 03 211 1899
F: 03 211 1880
E: enquiries@powernet.co.nz

Submission of PowerNet Limited
To the Electricity Authority
On Updating the Regulatory Settings for Distribution Networks

14 March 2023

Introduction

PowerNet Limited (PowerNet) appreciates the opportunity to make a submission to the Electricity Authority on the Regulatory Settings for Distribution Networks.

PowerNet is an electricity management company with head offices based in Invercargill. It is a joint venture company, owned (50/50) by Electricity Invercargill Limited (EIL) and The Power Company Limited (TPCL).

EIL and TPCL established PowerNet in 1994 to achieve economies of scale through integrated network management across the Southern region's Electricity Distribution Businesses (EDBs). It manages the non-exempt EDBs of EIL and OtagoNet Joint Venture Limited (OJV), the exempt EDB of TPCL, and the non-grid connected Stewart Island Electric Supply Authority (SIESA).

PowerNet manages an asset base and investments in excess of NZ$1 billion. It provides services to over 75,000 customers through more than 14,200 circuit kilometres and manages the fourth largest suite of EDB assets in New Zealand. In addition to EIL operating in Invercargill and Bluff, TPCL operates in Southland and West Otago, OJV in Frankton, Cromwell and Wānaka (and the rural and coastal Otago region that surrounds Dunedin City), and SIESA on Stewart Island.

PowerNet has long-term management agreements in place with EIL, TPCL and OVJ. With the benefit of integrated business management systems in place, and a core purpose and expertise in asset management capability, PowerNet has remained a high-performing asset manager for these networks.

PowerNet's continued commitment to improvement across asset management, workplace safety and operational efficiency, coupled with a focus on commercial growth and business development, has meant our customers continue to receive a safe, reliable and efficient power supply.

This PowerNet submission is supported by of EIL, TPCL, and OJV and provides feedback with respect to the process and issues paper published by the Electricity Authority.

PowerNet supports the Electricity Networks Association (ENA) submission. This submission reinforces some of the key points made in the ENA submission and addresses where the networks PowerNet manage wish to highlight or emphasise issues. This is not intended however to lessen the relevance or emphasis of any of the points in the ENA submission.

PowerNet also supports the Government's aspiration to reach net zero emissions by 2050 and 100 percent renewable energy generation, that is not cost prohibitive, by 2030. We acknowledge the important role distribution networks will play in supporting New Zealand's transition to a low emissions economy.

Key points

The importance of accurate data

PowerNet supports the ENA submission that places data at the heart of New Zealand's electrified future. PowerNet sees the provision of accurate real-time network information as a key component in the relationship between EDB's and flexibility providers to help meet customer aspirations and future consumer demand. There is significant smart meter penetration on the networks PowerNet manages, there remain limitations around the use of this data due to privacy issues and restrictions placed by retailers on distributors to protect their commercial position. We are in the early stages of implementing and using real time data from smart meters for network management, however the opportunities are significant for distributers and independent flexibility providers to increase distributed energy resources (DER) uptake.

Sustainability of the sector – capability and capacity

PowerNet supports ENA's comments in relation to EDB's being aware of the need to increase their capability and capacity. PowerNet is aware of the pressures on wage rates and cost increases across the sector including rising costs of debt and infrastructure and is actively forecasting and planning to ensure the needs of the business are met.

PowerNet is cognisant of the industries aging workforce, and the pressures of securing skilled industry professionals within both the domestic and international markets, and the need for favourable immigration settings that meet resourcing requirements. PowerNet is taking active steps towards upskilling staff and seeking opportunities to develop the capacity and capability that will be required for the future.

PowerNet is confident in its ability to see opportunities and challenges that present and be agile to respond. PowerNet is committed to meeting the needs for consumers that will continue to deliver lower prices, better services, better reliability, and the capacity and capability required for decarbonisation and 100% renewable energy generation.

Part 6 requires substantive review

PowerNet supports the ENA submission around the need for substantive review and update to Part 6 of the Code. PowerNet considers that the review should cover processes, timings, fees and pricing principles of distributed generation (DG) and acknowledge the changing landscape of the electricity industry in this area. This review should also ensure that any changes support the key issue of data availability to support the sector through DER and DG.

Business flexibility

PowerNet acknowledges that EDB's are experiencing significant generational shifts, however not all at the same time and not in the same ways. The challenges and opportunities that this affords will require flexibility within the business to allow innovation that supports adapting to, and adoption of, the changing demands and needs of consumers. There are generational shifts in distribution (more smaller generating facilities and distributed generation at or near demand centres), digitisation, and the rapid move towards decarbonisation. The flexibility required supports the key points above of ensuring that EDB's have access to the data, regulations, and resources they need to make decisions that will put the sector at the front of these challenges and opportunities over the next 30 years.

PowerNet Contact

PowerNet contact for this submission is:

Michelle Fowler-Stevenson
Regulatory and Risk Manager
mfowler-stevenson@powernet.co.nz
027 201 9802

14 March 2023

1. Submission

1.1 In July 2021 the Electricity Authority (the Authority) published the Updating the Regulatory Settings for Distribution Networks: Improving competition and supporting a low emissions economy discussion document.

1.2 The discussion paper presented an overview of potential issues affecting the sector and potential updates to the regulatory settings that could better support competition and the transition to a low emissions economy.

1.3 PowerNet was one of 51 submissions from a wide range of stakeholders.

1.4 In December 2022 the Authority published the Issues Paper: Updating the Regulatory Settings for Distribution Networks (December 2022).

1.5 PowerNet Limited (PowerNet) appreciates the opportunity to make a submission to the discussion document.

1.6 This submission is supported by Electricity Invercargill Limited (EIL), The Power Company Limited (TPCL) and the OtagoNet Joint Venture (OtagoNet) and provides feedback with respect to the preliminary views in the paper.

1.7 PowerNet supports the Electricity Networks Association (ENA) submission to the Authority. We have reinforced some of the points raised in the ENA submission to highlight areas where PowerNet have particular experience. This is not intended however to lessen the relevance of any of the other points in the ENA submission.

2. Background

2.1 PowerNet is an electricity management company with head offices based in Invercargill. We manage the non-exempt electricity distribution businesses (EDB's) of EIL and OJV, the exempt EDB of TPCL and the non-grid connected Stewart Island Electric Supply Authority (SIESA). PowerNet is a joint venture company, owned (50/50) by TPCL and EIL.

2.2 PowerNet manages an asset base and investment in excess of NZ$1 billion. It provides services to 75,000 customers through more than 14,100 circuit kilometres and manage the fourth largest suite of EDB assets in New Zealand. TPCL operates in Southland and West Otago, EIL in Invercargill and Bluff, OJV in Frankton, Cromwell and Wanaka and the rural and coastal Otago region that surrounds Dunedin City and SIESA on Stewart Island.

3. Comments

3.1 PowerNet supports the Government's aspiration to reach net zero emissions by 2050 and 100 percent renewable energy generation that is not cost prohibitive by 2030. We recognise the important role distribution networks will play in supporting New Zealand's transition to a low emissions economy.

3.2 Despite Transpower's recent changes to transmission pricing methodology which adversely impact on load control incentives, EDB's will need to ensure hot water load control and other flexibility services, including distributed energy resources (DER) can be used efficiently, as they will be a key component in the suite of measures required to achieve this aspiration and meet the growing consumer demand.

3.3 Whilst we fundamentally agree with the need for flexibility services; the specific scope, timing and nature of flexibility services best suited to support the necessary evolution of the electricity sector remains uncertain.

3.4 Sapere's analysis of flexibility services shows that material benefits will not accrue until after 2035 (Cost-benefit analysis of distributed energy resources in New Zealand; Reeve, Stevenson and Comendant; 2021). Even if uptake exceeds the timeframes anticipated, there remains time to consider and test options before committing to a particular approach, including definition of standards.

3.5 We also recognise that the pace of change needs to be responsive to the community of need. Different regions will need different solutions at different times. EDBs won't need to be at the same stage in their evolution at the same time. This is evident even within the PowerNet networks.

3.6 For example, the variable geography, ICP density, and consumer mix means the preferred community solutions will differ for the EIL central Invercargill business community compared with the TPCL rural farming community.

Collaboration

3.7 PowerNet views that enhanced coordination between EDB's improves the efficiency of distribution. EDB's work together via the ENA, EEA and direct sharing of experience with peer EDB's. Recent PowerNet examples include:

- the South Island EDB decarbonisation project
- the establishment and operation of SmartCo
- development of shared systems
- South Island EDB Forum, which has arrangements such as an insurance buying group in place.

3.8 Examples over recent years clearly demonstrate that collaboration between EDB's delivers better outcomes and benefits for consumers. PowerNet is confident collaboration will continue and increase, given the experience to date and will continue to seek out collaboration opportunities.

Evidence Based Development of Standards

3.9 Setting standards in advance of a rigorous process of testing and proving the most viable and valuable market solutions has the potential to lock EDBs into restrictive requirements that quickly become out of date and may create unanticipated barriers to consumer adoption. Accordingly, we believe an evidence-based approach that delivers proven benefits and incentivises innovation is an essential pre-requisite to the development of standards for flexibility services rollout.

3.10 This evidence base must be done in partnership with EDBs. Many EDBs are already researching and testing network solutions.

3.11 PowerNet is actively involved in hot water load control, alongside investigation of additional flexibility services market opportunities to support the reliable and safe operation of our networks.

Real-Time Information

3.12 Provision of real-time network information is integral to growing an informed community capable of offering and implementing solutions. Timely access to smart meter data for both EDBs and flexibility providers is currently a significant barrier to achieving an informed community, and as a result impacts on flexibility services and DER uptake.

3.13 Greater low-voltage (LV) visibility is an important feature of future networks, which includes the management of power quality for LV network customers. EIL and TPCL networks currently have relatively high smart meter penetration, however because there isn't 100% coverage the data is incomplete and unless we have appropriate data at every point of consumption on the network we cannot determine where energy flows on every part of the network without estimation. Where smart meters are available, but data is not accessible PowerNet is forced to consider alternate options.

3.14 PowerNet was integral in the establishment of SmartCo. PowerNet's shareholders, TPCL and EIL are SmartCo shareholders, with the TPCL and EIL networks the smart meter asset owners, with the MEP function contracted to SmartCo.

3.15 The SmartCo relationship has enabled the development of electronic tools for LV monitoring across EIL and TPCL networks, providing valuable information for PowerNet as network manager, which will enable DER monitoring and management for network and customer purposes.

3.16 Privacy permission issues place limits on the use of the data. In addition, where the EDB does not own the smart meters, energy retailers restrict EDBs to use the smart meter data for network purposes only. Retailers do not want the use of smart meter data for any type of activity that might directly or indirectly compete with their business. This restriction stops EDBs (or any party) making the data available to independent DER flexibility providers.

3.17 PowerNet has sought to establish relationships with retailers regarding access to meter data, and in particular for the data pertaining to the OJV network, where the PowerNet shareholders are not the smart meter asset owner. Whilst this has been mostly positive, it is inconsistent and can be incomplete. It relies on requests for specific data for specific periods, as opposed to general continuous access, on commercial terms, for network management purposes.

3.18 A good example of issues experienced with uneven access to information across the PowerNet networks is the variance in smart meter coverage and information access between the EIL and TPCL networks, which have high penetration and PowerNet has access to that valuable information, compared with lower volumes on the OJV network and no access. The level of estimation required is far greater for OJV and uncertainty in network operating parameters increases closer to the customer, especially on the LV network. Remote and efficient detection of broken neutrals, reverse power events from undisclosed DG connections, overcurrent event or over and under-voltage events is not currently available for OJV as it is for TPCL and EIL due to lack of data access.

3.19 Without full, consistent data, provided in a timely manner, the value of the data is limited. A mutually agreeable standardised process for sourcing and sharing real-time network data across the entire distribution network, such as a centralised Application Programming Interface (API) without retailers as 'gate-keepers' but with appropriate access controls, is considered a key output to deliver improved access to information.

3.20 PowerNet has a dedicated New Energy team focused on developing capability in alternative solutions. The team includes a dedicated DER Engineer who is progressing projects on smart meter data analysis, LV network monitoring, and forecasting DER uptake, impact on network power flows and mechanisms for DER control. The establishment of this team by PowerNet demonstrates that EDBs can and do develop the capacity and capability to manage the challenges the future holds.

3.21 Additional resourcing opportunities that are not impacted by regulatory income restrictions may be required to accelerate development of systems and leveraging of opportunities available through DER control and flexibility.

Part 6 Review

3.22 Since the inception of Part 6 of the Code, the number of Distributed Generation (DG) connection applications has progressively grown, and the number of applications is expected to continue to escalate at an ever-increasing rate. As a result, we consider Part 6 is in need of a substantive review, covering processes, timings, fees and DG pricing principles.

3.23 PowerNet considers there is a strong need for separate processes to be established relating to large DG applications that involve more complex review than medium, and small comparatively simple DG applications.

3.24 The ENA provide a good summary of key issues experienced by EDBs in relation to the connection of DER under Part 6 (refer ENA submission Appendix A - Q6).

3.25 PowerNet recognises that any proposed change to Part 6 that has the potential to make DG connection harder will be difficult to adopt. Nonetheless it is critical that the realities of DG connection processes, timing, and costs are properly recognised, understood and accepted.

Cost Implications

3.26 The ability for EDBs to incur the additional expenditure associated with development and implementation of new flexibility service solutions; and the associated transfer of these costs to consumers is limited by the regulatory regime. Developed under Part 4 of the Commerce Act, non-exempt EDBs expenditures and service levels are tightly regulated by the Commerce Commission. Exempt EDBs also face regulatory oversight from the Commerce Commission via the information disclosure regime.

3.27 The PowerNet network management structure provides a locally-led infrastructure to efficiently govern and manage distinctive local EDBs in a practical manner – that still allows for independence where required, creates demonstrable efficiency benefits, and minimises costs for consumers. PowerNet consider that this model offers a practical alternative to consolidation of EDBs that provides genuine benefits to consumers and preserves local ownership.

3.28 Accordingly, PowerNet advocate for engagement between EDBs and the relevant regulatory agencies (i.e. the Authority and the Commerce Commission) to jointly identify practical and meaningful incentives and regulatory parameters to enable EDBs to research, test (potentially in the market) and develop viable network solutions.

3.29 EDBs are facing increasing pressures to attract and retain skilled staff in the electricity sector. There is consequently, growing pressure on wage rates and overall costs for the sector and industry inflation over consumer price index (CPI). PowerNet would support innovation and collaboration around attracting and retaining skilled professionals in the electricity sector.

4. General Observation

4.1 Additional detail relating to specific questions outlined in the discussion paper are provided in Appendix A below.

4.2 PowerNet acknowledges that the scope of the consultation paper includes consideration of issues both within and outside the Authority's powers. Nonetheless we recognise that transitioning New Zealand to a low emissions economy will require a multi-faceted approach involving all stakeholders across the sector.

4.3 PowerNet welcomes the opportunity to engage more directly with the Authority; and with other key stakeholders, to provide a better understanding of our businesses and to work in partnership to achieve mutually beneficial outcomes.

4.4 We thank the Authority for the work to date and appreciate the opportunity to make a submission. We look forward to receiving further detail and clarity.

PowerNet Contact

PowerNet contact for this submission is:

Michelle Fowler-Stevenson
Regulatory and Risk Manager
mfowler-stevenson@powernet.co.nz
or 027 201 9802

Appendix A:

Response to discussion document consultation questions

Consultation Question
Q1. Do you see value in commissioning two separate reviews to look into the merit and practicalities of implementing the recommendations of the UK's Energy Data Taskforce around unlocking the value of customer actions and assets and delivering interoperability in a New Zealand setting?
PowerNet does not see value in commissioning two separate reviews to look into the merit and practicalities of implementing the recommendations of the UK's Energy Data Taskforce as New Zealand is a unique environment. Some consideration could be taken for the Taskforce's objectives to see if they align.
Q2. Does this capture the key data needs for distributors to make informed business decisions that will unlock the potential of distributed energy resources (DER) for the long-term benefit of consumers? If not, what data is missing and what would it be used for?
We agree that this captures the key data needs for distributors to make informed business decisions that will unlock the potential of DER for long-term benefits of consumers. Historical non-aggregated ICP-level Consumption Data and Power Quality data are very important to enable congestion management as well as support network planning and pricing initiatives, with high priority. Visibility of location, size, and functionality of (non-exporting) DER installed on LV networks will be helpful in the immediate future to understand growth and potential for future growth in network demand. It will become more important over time with increasing penetration of technologies but being able to understand how new technologies are impacting growth from today would support greater network planning and better outcomes for customers. PowerNet is beginning to operationalise the use of real time data to identify outages far sooner than may otherwise be possible in many cases. Reduced outage times for customers are expected so where access to real time data can be facilitated for EDBs the sooner the better. It is acknowledged this is a separate issue than the effective leveraging of DER management, including hot water load control.
Q3. Do you agree with the prioritisation of the key data needs for distributors? If not, why not and how would you suggest the priority is changed?
If meter status data is included in power quality data, we broadly agree with the prioritisation. PowerNet was integral in the establishment of SmartCo. PowerNet's shareholders, TPCL and EIL are SmartCo shareholders, with the EIL and TPCL networks the smart meter asset owners, with the MEP function contracted to SmartCo. The SmartCo relationship has enabled the development of electronic tools for LV monitoring across the EIL and TPCL networks, providing valuable information for PowerNet as network manager, which will enable DER monitoring and management for network and customer purposes. From its experience, PowerNet considers the following data needed to make informed business decisions is high priority: 1. Historical non-aggregated ICP-level consumption data 2. Historical non-aggregated power quality data including meter status data 3. Visibility of location, size, and functionality of DER installed 4. Real-time non aggregated ICP-level consumption data 5. Real-time non-aggregated power quality data including meter status data such as *Last Gasp* and *Power Restore* PowerNet acknowledges that real-time data may not be possible at this stage due to limitation of functionality of some of the smart meters or the communication networks. However, enabling regulations to allow unfettered access where real time, or close to real time, data is available is a high priority step. The resolution and types of data to be made accessible should only be limited by the technology capability. Delaying access to the data by up to 7 years is contrary to the objective of delivering equitable value to the customer through network and pricing efficiency, as the data exists now. Ultimately from the customer perspective they should benefit from a sooner the better approach

Q4. Does this capture the key data needs for flexibility traders to make informed business decisions that will unlock the potential of DER for the long-term benefit of consumers? If not, what is missing and what would the data be used for?
PowerNet broadly agrees that this captures the key data needs for flexibility traders to make informed business decisions that will unlock the potential of DER for the long-term benefit of consumers. EDBs will require access to non-aggregated data (as mentioned in Q2 and Q3) to be able to perform congestion analysis necessary to inform DER management decisions and flexibility traders.
Q5. Do you agree with the prioritisation of the key data needs for flexibility traders? If not, why not?
We believe that flexibility traders would share the same high priority for data needs as EDBs. Access to data would enable competitive markets to develop, which would be in favour of value to customers.
Q6. Do you agree that the Authority should amend the Data Template to address the above issues to improve its workability? If not, why not?
PowerNet agrees that codifying the ENA/ERANZ variation to the Data Template would improve the workability of the future agreements. PowerNet have had issues where consumption data could not be combined with network topographic data under the provisions of the existing Data Template. The Data Template should be amended to address this as data holds little value without being able to aggregate it.
Q7. Are there other changes to the Data Template that would improve it and assist it to be a useful mechanism for open access to data?
PowerNet believes that reasonable costs need to be better defined. One retailer quoted $9.00 per ICP per year, which is beyond unreasonable. Smart meter data provides a way of measuring network loading from LV network and above. It is therefore value to get these measurements as close as possible to when the measurements are done. We request the frequency of data provision to be high as can be with systems in place or available on the market today e.g., real time (or near real time). The systems already exist that allow MEPs to provide this service to MEPs a reasonable cost and speed. We also request the Authority to extend the template to allow access to Power Quality data. The Authority mentions this might be required in the future, however there is immediate need and usefulness of this data. The template approach is outdated and a more modern and wholistic approach to data access needs to be put in place so the various parties can utilise and deliver the timely and competitive benefits to customers to enable a net-zero carbon future.
Q8. Do you agree that this is an issue? If not, why not?
PowerNet agrees that there are transaction costs associated with obtaining retailer permission and is an issue worth addressing. Retailers acting as gatekeepers of data is largely for historic reasons. In future data will have far greater utility for customers when available to other service providers. Ideally there would be a more data centric approach with one source of data (such as an API) and access permissions to enable efficiencies however access from MEPs would be an appropriate short-term solution to limit transaction costs and potential anticompetitive behaviour.
Q9. Should the Authority amend the Code to clarify that MEPs can contract directly and provide both ICP data to distributors (and flexibility traders) for permitted purposes? If not, why not?
PowerNet agrees that the Authority should amend the Code to clarify that EDBs can contract directly with MEPs. Whilst a customer may regularly change retailers it is less likely they will change MEPs. We refer to paragraph 3.17 of our submission as to why.

Q10. Should the DDA Data Template be updated to include Power Quality Data? If not, why not?
If the DDA Data Template is going to be the long-term solution for EDBs to access data, then PowerNet believes that the DDA Data Template should be updated to include Power Quality Data. PowerNet believes that more appropriate solutions to accessing data exist, namely, an automated system that provides consumption and power quality data at the desired frequency and resolution.
Q11. Do you think that the transaction costs associated with negotiating access to MEPs is a problem that the Authority should prioritise? If no, why not? If yes, do you think there is merit in developing a template to develop a default template to help reduce transaction costs?
The transaction costs may be high depending on the MEP that an EDB must deal with. Creating default terms for access would make sense rather than requiring each EDB to individually negotiate what should be a consistent requirement
Q12. Do you agree that MEP pricing for ICP Data (including Power Quality Data) and related data services is not unreasonable at this stage? If not, why not?
We understand this is quite variable around New Zealand at present and should be further considered.
Q13. Do you agree that MEP pricing for the provision of ICP Data to distributors (and other parties) could be more transparent? If not, why not?
Yes, PowerNet believes that MEP pricing for the provision of ICP Data to distributors should be more transparent.
Q14. To support the transparency of pricing, standardisation, and equal access to data, do you think that the Authority should consider further implementing IPAG's Input Services recommendation that MEPs publish standard 'pay-as-you-go' terms open to all parties? If yes, why and what do you think this could cover? If not, why not?
PowerNet believes that the Authority should consider further implementing IPAG's Input Services recommendation if it can demonstrate that the cost is fair for the service provided.
Q15. Do you agree that distributors' visibility of the location, size, and functionality of DER needs to be improved within the next 3–7 years to support network planning? If not, why not?
PowerNet believes that the visibility of the location, size, and functionality of DER is a significant issue for EDBs and should be addressed as soon as practical. PowerNet is currently getting registered EV counts per transformer location from Waka Kotahi, which other distributors would benefit from. As EV uptake is rapid, PowerNet wanted to be ahead of the curve rather than wait and find out too late that the network is congested and cannot support EV charging. This is one example of practical data that is already available that we shouldn't have to wait 3-7 years for.
Q16. Do you have any views on the type and size of DER that needs more visibility?
EV chargers (as well as EV info/battery size as it will help understand AC charging capacity and patterns) installed in residential premises as well as domestic batteries are a priority for PowerNet. Essentially, the larger the DER the more significant. All DER is relevant (including controlled hot water), and the aggregate impact of many smaller devices needs to be understood to maximise benefit as well constraints on a DER's flexibility. Perhaps a system of opting into DER detail sharing to enable flexibility usage benefits for owners would work well. Some DER size thresholds above which providing flexibility details becomes mandatory may be appropriate in combination with voluntary sharing.
Q17. The Authority acknowledges that definitions of 'real-time' vary, please explain what real-time data means to you.
For meter status information such as Last Gasp and Fault Restore, 'real-time' should be within seconds of an event rather than minutes or more. For power quality data and consumption data 'real-time' should mean within five minutes.

Q18. Do you agree that access to 'real-time' consumption and Power Quality Data won't be needed for at least five years?
PowerNet is already receiving near real-time meter status information such as Last Gasp information and is finding it valuable in improving customer service. Therefore, it is valuable to EIL and TPCL networks now. This is not necessarily a case of need but instead of untapped value for customers that may be easy to deliver sooner than later in many cases. It takes a significant time for changes to be consulted on and made. Different EDBs are at different stages and capability of being able to use real time data, however this should not be seen as reason to restrict the industry pursing accessibility of this data for those who are ready to use it to deliver value to customers today.
Q19. Do you agree that flexibility traders' access to ICP data must be improved so they have the same level of access as distributors (and retailers), with whom they might be competing to provide contestable services? If not, why not?
No additional comment to those raised by the ENA
Q20. Do you think the Authority should prioritise modifying the Data Template, so that flexibility traders can use it, or should the Authority prioritise amending the Code to clarify that MEPs must provide ICP data directly to flexibility traders and distributors for a set of permitted purposes without the need for retailer permission? If neither, please explain why.
The authority should prioritise amending the Code to allow MEPs to provide ICP data directly to EDBs and flexibility traders
Q21. Do you agree that flexibility traders need access to granular current and likely future Congestion Data on distribution networks within the next 1–3 years?
Current regulatory requirements are for EDBs to publish congestion information on the website which does provide some indication to flexibility providers. As better LV information and analysis becomes possible more detailed congestion information/hosting capacity can be published. It would be PowerNet's intention to seek out flexibility services to offer solutions in areas that they have identified constraints rather than flexibility services approach PowerNet, with PowerNet providing congestion information at that time.
Q22. Are there any other issues preventing distributors from providing granular current and likely future congestion data?
Having access to smart meter data does not mean congestion information is instantly available. PowerNet is currently working towards being able to provide accurate and meaningful network congestion information to third parties. This is going to be a large task to complete that will take time, requiring additional information not collected in the past and updating business process, but helped by having access to smart meter data. Other EDBs simply may not have the data, tools and capability to provide congestion analysis once they start to see smart meter data so will need to justify this significant development and allow time.
Q23. Do you agree that visibility of the location, size, and functionality of larger DER needs to be improved within the next 3–7 years to help understand the drivers of network congestion, what DER is 'controllable', and what services could be offered to owners of DER? If not, why not?
PowerNet believes that, ideally, the visibility of the location, size, and functionality of larger DER needs to be improved in less than 3 years. Without improved visibility of DER, particularly larger DER, EDBs are unable to make the more efficient decisions on managing network congestion.
Q24. Do you have any views on the type and size of DER that flexibility needs to have improved visibility?
It's likely that flexibility traders would share the same interest as PowerNet; EV charging at residential premises, followed by domestic scale batteries. Again, it is a matter of size with all DER being of interest for its aggregated impact.

Q25. Do you think that the Authority, instead of a DER registry, should consider amending the registry data fields and / or requirements to improve DER visibility?
As PowerNet has already set up processes to interact with the registry, its preference would be to amend the registry data fields and requirements to improve DER visibility. The industry needs to be mindful that the future will see a great number of DER devices with various flexibility characteristics and constraints that will need to be understood in real time coupled with cost of response. The industry should consider early if the registry is able to evolve into an adequate future system, we might anticipate
Q26. Do you agree that the Authority should prioritise work on addressing the other issues outlined in this chapter?
PowerNet believes that the Authority should work on and give high priority to addressing the issues hindering access and availability of key data for distributors as mentioned in our responses to earlier questions.
Q27. Do you agree that flexibility trader access to real-time congestion and ICP data won't be needed for at least five years?
As noted in Q22, PowerNet is actively working on getting this information as we see it is an enabler for new flexibility services to develop and reward DER owners. PowerNet acknowledges this will take some time and will utilise this time to move to a position of readiness so we can respond when real-time congestion and ICP data is readily available.
Q28. Do you agree that model privacy disclosure terms are appropriate? If not, why not
PowerNet agrees that model privacy disclosure terms are appropriate
Q29. Do you agree that model privacy disclosure terms would facilitate data access?
PowerNet agrees that model privacy disclosure terms would facilitate data access if they are made in such a way to make retailers and MEPs more comfortable providing access EDBs access to ICP data.
Q30. Do you see any practical issues with this proposal?
PowerNet does not see any practical issues with the proposal.
Q31. Should the Authority create model terms for distributors and MEPs as well given the range of data being collected through smart meters? If not, why not?
PowerNet believes that it will be very little additional effort for the Authority to create model terms for distributors and MEPs as well, as these will be very similar to ones being developed for retailers and MEPs. For this reason, PowerNet believe it would be appropriate.
Q32. Would the industry find it helpful for the Authority to conduct workshops on privacy preserving/minimisation techniques?
PowerNet believes it would be helpful if the Authority conducts workshops on privacy preserving/minimisation techniques.
Q31. What are your views on the three options presented above, to deal with Issue 1 (that distributors might prefer network investments to NNS)? What alternative option/s would you favour, if any?
Option 1: PowerNet already considers NNS solutions as standard process of network planning and management. It believes that EDBs are not reluctant to adopt NNS, and 'alive to the issues' however there are still areas of uncertainty that could be teased out and resolved via workshops (for example the misconception from some distributors on profits from NNS investment). However, PowerNet expects that EDBs will do this naturally via collaboration.

Option 2: Trials are valuable for the industry and funding would be appreciated to facilitate these. Funding will help to de-risk some of this activity which will lead to greater exploration and adoption. A potential issue here is that the benefits may disproportionately go to EDBs that have trials hosted on their local network, both in knowledge gained but also through subsidised investment. Care would be needed to ensure efficient and effective communication.

Option 3: PowerNet believes that publishing assessment of NNS could be challenging, however could have benefits for continued collaboration. There is already evidence of EDBs exploring NNS and aware of their responsibilities. Care should be taken to ensure the publishing requirements are kept simple to minimise burden imposed.

Q32. Do you agree with the tentatively preferred intervention to deal with Issue 2 (Option 3: encourage standing offers) and the collection and monitoring of information proposed under Option 4? If not, what alternative option/s would you favour, if any?

Option 1: PowerNet believes that EDBs are familiar with competitive tenders so doesn't believe that Option 1 is the best one.

Option 2: PowerNet supports Ara Ake's MTR and Kāinga Ora peer to peer trials believing that they will deliver benefits to customers and EDBs but believes that they are not NNS and not an option to address the perceived issue of EDBs favouring 'in-house' NNS.

Option 3: Developing standing offer pricing would be a beneficial exercise for EDBs. Workshops to understand approach could help encourage this. The standing offer would need to be supported by agreement terms that provide suitable assurances of flexibility reliability.

Q33. Do you think there are circumstances in which the Authority should extend the arm's length rules? If not, why not?

PowerNet believes that there are no circumstances in which the Authority should extend the arm's length rules. PowerNet's purpose is Safe, Efficient, Reliable Power to Communities. If this purpose is met via self-supply of competitive NNS then this option should be available to us. The participation of EDBs in NNS may bring these services to regional areas more quickly than if EDBs are excluded from providing NNS, particularly if non-EDB flexibility providers have a primary focus on the larger urban areas.

PowerNet believes that current NZ law and regulation works well to prohibit anti-competitive practice with an effective regulator. The NZ justice system allows for remedy and recompense if any party believes EDBs are not following these laws and regulations. There is no reason why the Authority should seek to pre-emptively act to preclude EDB self-supply of NNS on the assumption that it contrary to the interests of customers without evidence. This would be a matter of waiting until there are clear indications that it is necessary. At this stage it is likely to be a deterrent to progress.

Q34. Do you agree with the Authority that Option 1 should be implemented, and that Option 2 could be considered in the event of allegations of, or instances of anti-competitive harm in contestable markets (Issue 3)? If not, what alternative option/s would you favour, if any?

As mentioned above, NZ has enough laws and regulations to prevent anti-competitive behaviour and the Authority should not pre-empt legal process based on allegation. PowerNet could accept Option 2: Impose arm's-length rules on distributors involved in certain downstream contestable markets only if there are proven instances of anti-competitive harm. At this stage, monitoring is appropriate until there is a significant issue.

Q35. What do you think of the Authority's option of using the education option proposed elsewhere in this paper, to include some guidance on how distributors should collaborate in future?

There is already a strong collaborative drive between EDBs. Many distributors already collaborate with each other and other parties sufficiently through various forums and projects.

EDB's work together via the ENA, EEA and direct sharing of experience with peer EDB's. Recent PowerNet examples include:

- the South Island EDB's Decarbonisation Roadmap for Process Heat. This is a stock take and detailed customer engagement of all process heat across the South Island that has the potential

to move to electrification. This initiative is being supported by EECA and Transpower. The findings are assisting PowerNet to work with its connected customers for their particular plans, with it also supporting recent GIDI fund applications. The information is also integral to network asset planning.

- the establishment and operation of SmartCo, the smart meter management company that has deployed smart meters across the shareholder EDB networks and is now developing and delivering data tools and information to the shareholder EDB's to enable LV visibility and other valuable information. SmartCo is owned by WEL Networks, Network Tasman, Alpine Energy and the two PowerNet shareholders, TPCL and EIL. SmartCo also provides services on the Mainpower and Top Energy networks.
- PowerNet has developed a billing system with a 3rd party, which is now deployed to three other EDB's and is an example of shared systems.
- the South Island EDB's jointly marketing their insurance programmes to the insurance industry to deliver direct financial benefits to customers. This initiative involves Alpine Energy, Mainpower, Marlborough Lines, Nelson Electricity, Network Tasman, Buller Electricity and the PowerNet insurance group (EIL, TPCL, & OJV). The sum insured has delivered a premium saving which has directly benefit customers through the DPQP regime.

Alongside existing collaborative networks and systems, PowerNet would welcome the EA offering workshop with EDBs e.g., via ENA STWG meetings.

Q36. Do you think it would be helpful for the Authority to encourage the use of joint ventures between distributors to increase their integration of DERs and their procurement of NNS projects? And should this be combined with the first option?

PowerNet does not agree that the Authority should encourage the use of joint ventures between distributors to increase their integration of DER and NNS projects. Distributors are capable of doing this without regulatory intervention. The establishment of both PowerNet and SmartCo are clear examples of this.

Q37. Do you agree with the proposed approach to monitor progress between Transpower and distributors in developing standard offer forms for procuring NNS, and monitor whether issues associated with operating agreements for flexibility services are developing, and prioritise resource to progressing the other chapters? If not, why not?

Monitoring progress of industry lead development is appropriate with no other action warranted until there is evidence of undesirable outcomes.

Q38. Do you have any views on the best way the Authority can monitor whether issues associated with operating agreements for flexibility services are developing?

Ensuring incentives for appropriate EDB investment are correct is likely to be the best approach.

Q39. Do you have any suggestions for how the Authority can support industry-led work on providing guidance on best practice and templates for operating agreements?

PowerNet believes that a codified definition of flexibility services is needed. The Authority should work with the industry and ComCom to achieve this.

Q40. What are your thoughts on the proposed scope for the Part 6 review? What, if anything, would you include or exclude, and why?

PowerNet believes that Part 6 is long overdue for significant review.

The Electricity Safety Regulations do not align with current versions of design standards and inverters. Although the Authority is not the regulator that maintains the Electrical Safety Regulations, the Authority could be more proactive in encourage that regulator to update their documentation

Definition of generation is not particularly explicit. The Code refers to a generator as anyone of

- The person who owns a generating station
- The person who operates a generation station
- The person who trades a generation station

There are instances where there is a different participant fulfilling each of these roles for the same generation plant. This is poor legislative practice; the definitions should be sufficient to identify the activity and the participant.

There is currently no clear instruction in the Code that network approval is required where an inverter is replaced.

Some years ago, the Authority had proposed a short-term change to the registry to record batteries by adding three fuel type descriptions, and then a permanent change converting the existing single generation fields to a hierarchical structure similar to that for meters. The fuel types being added to the registry to include “solar + battery”, “battery export” and “battery non export”. At the moment all that PowerNet can do is record the fuel type as “other” which means the registry statistics are no longer an accurate representation of generation installed either individually or in aggregate

Clear fines and authorisation in the Code for distributors to immediately disconnect unauthorised or non-compliant DG. Clear guidelines for distributors to be able to de-energise/disconnect/revoke approval of a DG system when it is not working within the parameters of what was applied for, has not followed regulation and standards or has not connected within the allocated timeframes would be useful. This requires entering a customer’s electrical installation to perform the disconnection, and there are safety implications for EDB staff or contractors in both this, and where DG exists that we do not know about.

The Code should include stronger measures to prevent distributed generators from changing the operating parameters of inverters that the final approval was based on, without the networks consent.

If a Part 1 application complies with the Code, and PowerNet’s connection and operation standards (and the area is not noted as congested in PowerNet’s congestion management policy), Clause 3 of Schedule 6.1 requires PowerNet to approve the application. This circumvents the hosting capacity provisions available in the Part 1A application process.

Three issues are also identified in Q41 below that would benefit from being reviewed.

Q41. In order, what are the three most important issues that should be addressed as part of a Part 6 review, and why?

There needs to be definition, or a guideline, on the criteria for assessing competing multiple final applications for the same POC and capacity as required in Clause 17(2) and 18(4)(aa) of Schedule 6.1 of Part 6.

The definition of incremental cost needs to be clarified. Test case scenarios around the following would be good for guidance.

a) Is a distributor charging a customer use of line chargers for exported electricity because the customer is not paying the appropriate cost of connection for reduced consumption a breach of the ‘incremental’ cost definition?
b) If a network requires re-enforcement, and the distributor increases capacity by 100MW, but only 70MW was required for the distributed generators, does the network need to fund the additional 30MW by spreading costs over all of its customer base that was caused by the generator?

DER needs to be brought into Part 6.

Q42. What are your thoughts on amending Part 6 of the Code to explicitly include DER, and what do you think are the key issues to be considered?

PowerNet believes that it is a good idea to amend Part 6 of the Code to explicitly include DER.

Q43. What are your thoughts on increasing the size threshold for Part 1 DG applications, including the benefits and drawbacks?

PowerNet supports increasing the size threshold for Part 1 DG applications as it simplifies the process for standard DG connections that are unlikely to affect network operations.

Q44. If the threshold were to change, what do you think the new threshold should be and why?

PowerNet believes that this threshold could be increased to 20kW.
Q45. What are your thoughts on adjusting the ten-business day timeframe in Part 1A?
For fast-track applications, the ten-business day timeframe is appropriate.
Q46. What are your thoughts on maintaining the current approval timeframes in Part 1 (comprehensive) and Part 2?
Current Part 2 approval timeframes are appropriate as there is enough scope for PowerNet to seek extensions, but extension times should be increased
Q47. If you seek a change to approval timeframes, what evidence can you give to support this?
No additional comment to those raised by the ENA.

Q48. What are your thoughts on adding a new DG application process for large-scale DG to Part 6? Please provide examples in support of why you think change is or is not necessary.
PowerNet believes that the Authority should allow for more time flexibility for when EDBs ask for time extensions rather than adding a new DG application process for large-scale DG. There needs to be more flexibility to distributors on assessing applications, connection costs, and applying new conditions as networks change over time.
Q49. If you think a new application process should be added, where should the threshold be and why?
PowerNet believes that the existing 1MW threshold is appropriate.
Q50. What are your thoughts on reviewing the priority of applications clause in Part 6 of the Code?
PowerNet supports a comprehensive review of application priority, queuing and capacity reservation components of Part 6. As mentioned in Q41, there needs to be definition, or a guideline, on the criteria for assessing competing multiple final applications for the same POC and capacity as required in Clause 17(2) and 18(4)(aa) of Schedule 6.1
Q51. Should the AS/NZS 4777.2:2020 Standard be mandated for inverters in New Zealand? If so, how should this be accomplished?
PowerNet sees benefits to EDBs and customers by being able to use the more sophisticated functions of inverters complaint with AS/NZS 4777.2:2020 so believes it should be mandated.
Q52. What are your thoughts on the Authority reviewing the prescribed maximum fees in Part 6 of the Code?
PowerNet believes that prescribed maximum fees in Part 6 of the Code are out of date and are not an accurate representation of the cost of assessing DG connections, resulting in cross subsidisation from other EDB customers. These fees should be updated to a cost-effective level and then adjusted by CPI annually and include a fee per MW for connections greater than 1MW.