19 April 2024

Consultation Paper – The future operation of NZ's power system
Electricity Authority
By email: FSR@ea.govt.nz

Tēnā koe,

Optimising consumer outcomes with an evolving future system

It is timely for the Electricity Authority (the Authority) to look at the design of the future energy system. With significant investments required in the energy system a well-designed framework for our future system will ensure outcomes are optimised. Powerco has a significant role in the future energy system as one of Aotearoa's largest gas and electricity distributors, supplying around 340,000 (electricity) and 113,000 (gas) urban and rural homes and businesses in the North Island. These energy networks provide essential services and are fundamental to Aotearoa achieving a net-zero economy in 2050.

We look forward to working with the Authority and other organisations as the energy system changes and the framework design evolves to optimise outcomes for consumers. We welcome the opportunity to submit and have answered the consultation paper questions in the attached table. Our summary views are:

Coordination mechanisms are the critical enabler	• A framework is required for systematic coordination between the different roles and responsibilities within markets to ensure flexibility. • Coordination is reliant on data flow. • Coordination with wider energy sector and within regions will be part of a solution.
Data flow & standardised approaches will drive a new system	• Data flow and standardised approaches are a key enabler in smart system management and participation. • Removing administrative and compliance costs (eg data systems, arrangements between parties) to access meter data should be a priority for the regulator.
Evolving markets needs space not prescription	• We caution against the Authority being too prescriptive / restrictive in the forming of a DSO, to avoid restricting use of flex for consumer benefit. Rather, look for early no-regrets steps to enable a future DSO while also supporting efficiency. • Instead, focus on monitoring, guidance and transparency as there is a real risk of regulatory intervention resulting in inefficient outcomes which ultimately comes at a cost to consumers.

If you have any questions regarding this submission or would like to talk further on the points we have raised, please contact Irene Clarke (Irene.Clarke@powerco.co.nz).

Nāku noa, nā,

Emma Wilson

Head of Regulatory, Policy and Markets
POWERCO

Attachment 1 – Consultation questions

Consultation Paper question	Powerco response
Q1. Do you consider section 3 to be an accurate summary of the existing arrangements for power system operation in New Zealand?	We agree with the summary.
Q2. Do you agree that we have captured the key drivers of change in New Zealand's power system operation? Please give reasons if you do not agree. **Q3.** Do you have any feedback on our description of each key driver?	We generally agree with the key drivers identified, however note that there is limited recognition about energy affordability and the driver for solutions that benefit consumers from an affordability perspective. Operational technology is a key driver however, the consultation paper does not reflect that capabilities in automated network management and operation are already advancing rapidly. For example, Scada and ADMS provide for future distribution system operation with visibility of network state and real time capability to maximise the value of flex. These are no-regrets technology investments that EDBs are already making notwithstanding that the system architecture is still evolving.
Q4. What do you consider will be most helpful to increase coordination in system operation? Please provide reasons for your answer.	Data flow and standardised approaches will be the key enablers for coordination. **Data** With data being fundamental to the future power system, it is increasingly important to look at new approaches to efficiently share data across interested parties, and this should be a priority for the Authority. Minimum levels of metering and DER data[1] are necessary to manage DER and improve visibility of DER. Sharing of data will support coordination. An example of where this has been successful is the UK Power Networks who have an open anonymised data portal on their website for anyone to use. The barriers to accessing meter data today are the cost, administrative and compliance burden. This is due to multiple interested parties involved (EDBs, retailers, meter providers etc) who work one-on-one to agree the framework, type of data, process, and cost. Meter data providers must cater to the different requirements and needs from a significant number of data consumers (eg 29 EDBs) and a standardised approach to data would help to eliminate some of these transaction costs, and ultimately help reduce consumer bills. We have experienced considerable variability across data providers, for example, ranging from provision of consumption data at no cost, to data provided for a marginal processing cost (eg $600 per month), to data provided at a cost premium per ICP which can accumulate to hundreds of thousands of dollars per annum.

[1] Data to improve visibility of DER, for example data about its connection, type, state, contracted volume, and capacity of the distributed resources.

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	The current approach is not sustainable to support increased coordination for system operation when the type of data and how it's used is changing. We would encourage the Authority to explore options to remove barriers: • How new metering technology can be used within the industry to avoid these administrative and compliance costs, particularly where data is not being collected for revenue-related purposes • Whether there are non-meter solutions that will in time, eliminate the need for meters • How standardised approaches to data systems and arrangements between parties can streamline information exchange • Whether notification requirements of DER would provide visibility needed, similar to the Code requirements for distributed generation. In addition, we note that IPAG's 2021 advice[2] identified issues related to metering and data access and made several recommendations, which remain relevant.[3] The report is directly targeted at the Authority's Statutory Objective and the issues and outcomes it identifies are key enablers for Future Operation of the NZ Power System by promoting competition in, reliable supply by, and the efficient operation of, the electricity industry for the long-term benefit of consumers. **Standardised approaches** Common standards and protocols would assist smart system management, operation, and mass market participation. This includes standards for DER visibility, communications, metering, data access, consumer opt-in/opt-out, contracts, safety measures. Our experience in data access described above, illustrates the need for a standard for how data is provided, which extends to common approaches for (near) real-time data flow in the future. **Appropriate regulatory oversight** System operation and progress will be assisted by removing barriers and offering regulatory oversight and monitoring that is not prescriptive at this stage (refer question 6).
Q5. Looking at overseas jurisdictions, what developments in future system operation are relevant and useful for New Zealand? Please provide reasons for your answer.	There is no one overseas system which can directly applied. New Zealand is an outlier, particularly as our EDBs are generally much smaller and we have more EDBs than overseas comparisons. However there are learnings from all overseas examples, For example, the Ofgem system has many applicable elements for adaption into New Zealand. This is possibly just a timing factor as they are further ahead in development of their future power system so offer more substantive analysis and testing of options and appropriate regulatory settings. We also note that the Ofgem example has developed further than the report

[2] The Authority's Innovation and Participation Advisory Group (IPAG) reported on Reducing Barriers to Customer Access to Multiple Electricity Services in 2019, updated 2021. While these recommendations were focused on enabling multiple trading relationships, many of them relate to metering and data access and these are equally relevant to enabling the Future Operation of the New Zealand power system.

[3] For example, IPAG's issues 9-19 (page 37) and outcomes 11 to 24 (page 40)

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	provided with the consultation paper; having tested the question of DNO and DSO separation and now focusing on regional level planning and enabling the option of combining the DNO and DSO functions. While the demand response market is maturing and opaque, there are valuable learnings the Authority can take from the review of Transpower's demand response programme.[4] This provides a valuable description of the roles and responsibilities of parties in the future system and cautions against aspects inconsistent with the Authority's Statutory Objective.
Q6. Do you consider existing power system obligations are compatible with the uptake of DER and IBR-based generation? Please provide reasons for your answer.	The existing power system obligations are largely compatible but with some improvements for visibility of DER, effective data exchange and ensuring stable and secure operation of the power system. **Consumer role** The role of consumers in the existing and future power system is not well understood or accepted by consumers and there is a stronger role for regulators to assist with consumer education and guidance. It may also be necessary to direct aspects of consumer equipment eg requiring smart EV chargers with consistent management/data technology. **Oversight and guidance** We strongly caution against the Authority being too prescriptive or restrictive in what a DNO or DSO does or how it operates (including information exchange). If rules are written before it's clear who is best placed to operate various forms of flex services, it will result in a sub-optimal outcome. EDBs could utilise some form of flex to reduce overall cost to customers where it may not be commercially viable for third-party providers. Restricting EDB participation could result in higher cost solutions. We recommend leveraging the Commerce Act approach which focuses on transparency and standardising key processes, rather than prescribing rules or regulating for what a DSO does. A more prescribed regulatory approach could come later (if justified and market failure is identified) once the system operation is monitored. The Consumer Care Guidelines provide a useful example where guidelines with monitoring which then evolved into some minimum requirements can work effectively. The Flex Forum has also emphasised the use of standards rather than regulation. The incentives facing EDBs need to be correct to encourage EDBs to seek out efficient DSO opportunities. This ensures there are no inefficiencies from duplicated infrastructure, complexities for customers or the transmission system operator, as network visibility and data access will be a common requirement for any form of DSO. We point to the IPAG work and the recommendations to take a staged approach to the reduction of barriers and introduction of guidance, tools and

[4] IPAG review of the Transpower demand response programme.pdf (ea.govt.nz)

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	regulatory responses (with specific examples of the response at different stages). Publishing information and working to principles is the first step. The recommended approach is equally applicable in enabling capability for the future system operation. **Emergencies** An agreed hierarchy or process of access to DERs is required for emergency situations. The transmission system operator uses a protocol for access to load in emergency situations and a similar approach could apply for the DSO for the rare events where needed. This does not mean that EDBs should be controlling the flex resources or guaranteed access to the flex. EDBs are already managing day to day outages and the market responds to this through pricing. As flex is relied on more for capacity shortfalls, then the price will reflect this. Use for the network will not always be the highest value use.
Q7. Do you consider we need an increased level of coordination of network planning, investment and operations across the New Zealand power system? Please provide reasons for your answer.	**Increased coordination will be necessary** Coordination is needed to understand the availability of, and need for, flex at distribution level. Similarly, the transmission system operator needs to know the extent of distributed resource in use at any time and how this is likely to influence its ability to call on emergency generation or load shedding. Coordination to optimise grid/network investment and planning also links to data and information flow. Networks need to understand customer developments, both in terms of demand (export and import) and flexibility uptake, and flex resources. We have provided further description about data and standards in question 4. **Use experience of the Authority and transmission system operator** The measures introduced to improve use of flex in the transmission system for winter 2023 and winter 2024 could be considered for wider application in the distribution network level. The same principles apply for visibility of resources, contractual arrangements and transparency of flex options. These measures are an example where regulators are responsive to a need, and we endorse the Authority to adopt responsiveness as a key principle as the future power system evolves. **Investment in technology** The increased coordination will rely on increased investment in operational technology and people capability for the future system. As noted in question 3, EDBs are already investing as new technology such as ADMS and the Authority will need to recognise these no-regrets investments in system architecture required now, and the step-up in investment in technology and people that will be necessary for coordination of the future system. The Transpower investment step-up in technology and staff for their evolving system provides a useful comparison. **Coordination beyond the electricity system** The coordination and information flow goes beyond the electricity system and includes fuel and gas network operation. This is not adequately addressed in the consultation paper. The Interactions with other networks are becoming

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	more uncertain as the energy transition progresses and understanding these interactions and ensuring coordination crucial. A regional approach (described in the paper as horizontal coordination) is particularly important for network planning with DER. There are some existing examples of this approach such as Western Bay of Plenty planning, RETA regional studies, or the concept of 'renewable energy zones' which could plan across the energy system. This goes beyond coordination and efficiency, but improved regional energy system planning is an important tool for consumer understanding, pricing signals, and building at pace.
Q8. Do you think there are significant conflicts of interests for industry participants with concurrent roles in network ownership, network operation and network planning? Please provide reasons for your answer.	**Guidance and transparency rather than ring fencing** There is regulation in place now to address conflict of interest scenarios in the consultation paper eg Part 6 has prescription around DER process, competition law is available if needed by a party, and the input methodologies (related party transaction) and cost allocation rules set relevant expectations. Approaches used by Transpower to manage conflicts in their SO role are also relevant and could be used at the EDB level. These existing rules work well provided they are enforced. The review of the Transpower demand reduction programme[5] and Transpower's response to this provides valuable insight into the roles and responsibilities in the future system and describing these to achieve the intended objective. Transparency, monitoring, and using the existing rules in place, are the key responses recommended. Regulation can have unintended effects. For example, ring fencing could exclude a whole range of possible energy solutions that could be offered by EDBs, and outcomes for customers will be more limited and potentially more costly. There will also be situations where no external party could be attracted to provide a service – whereby excluding EDBs from offering non-network solutions, would result in a fall back to traditional, more expensive solutions. At the very least, markets should be allowed to initially evolve with minimum restrictions. **Perceived conflict in capex vs opex design options** We acknowledge the Authority's assessment that regulated EDBs may have historically favoured network investment, despite the IRIS mechanism. We consider that existing mechanisms provide for any perceived conflict to be addressed. EDBs consider and address non-network solutions through the AMP process. This is the appropriate mechanism for developing and recording options (including flex options) and solutions, and demonstrating that the optimal customer option is selected. In addition, AMPs are subject to targeted analysis by the Commerce Commission.

[5] IPAG review of the Transpower demand response programme.pdf (ea.govt.nz)

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	We also note that the Commerce Commission has been working to further balance the opex/capex incentives through the recent IM Review.
Q9. Do you have any further views on whether this is a good time for the Authority to assess future system operation in New Zealand, and whether there are other challenges or opportunities that we have not covered adequately in this paper? Please provide reasons	We agree that it is timely for the Authority, alongside other agencies involved in policy and regulation of the energy sector, to assess and guide the future system operation. Assessing future system operation will be an ongoing task as the transition progresses. Given significant investment is required, establishing a framework for flex markets and future system operation will help coordinate multiple parties and products and ensure optimal outcomes for consumers. In a time of emerging needs and options, we endorse the Authority to carefully follow its Code amendment principles and consultation approaches recently reviewed.[6] For example, principles 3-7 are all explicitly relevant in considering the future operation of New Zealand's power system - a preference for small-scale trial and error options; preference for greater competition; preference for market solutions; preference for flexibility to allow innovation; and preference for non-prescriptive options.

[6] Decision paper on the Consultation Charter and Code amendment process.pdf (ea.govt.nz)