The future operation of New Zealand's power system

Submission on the Electricity Authority's Issues and high-level options consultation paper

19 August 2025

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1. Introduction

Preliminary

1. We welcome the opportunity to submit our views in response to the Electricity Authority's (the Authority's) consultation paper – "The future operation of New Zealand's Power System – Issues and high-level options".

2. We provide a summary of the key aspects of our feedback below and have attached our feedback separately to the specific questions raised using the Authority's template.

3. No part of our submission is confidential.

General Comments

Aurora Energy supports the hybrid model

4. Aurora Energy supports the hybrid Distribution System Operation (DSO) model proposed by the Authority. The hybrid model recognises that distributors are best placed to understand and respond to the changing requirements of their networks as consumers adopt new technologies such as Distributed Energy Resources (DER) and Electric Vehicles (EVs).

5. The hybrid DSO functions are an extension of initiatives already being undertaken by distributors. Distributors are investing in sensors and devices, procuring smart meter data and Low Voltage (LV) management platforms that are giving distributors unprecedented visibility of their networks. This visibility will allow more sophisticated coordination of DER resources and dispatch of flexible demand.

6. For decades, distributors have been managing hot water load to manage network peaks and recently this functionality has been complemented by the procurement and coordination of flexibility service providers.

7. At this stage in the DSO evolution, we encourage the Authority to allow the roles and functions to evolve naturally and work alongside industry to shape future DSO operations.

Regulatory change will be required to provide incentives for efficient DSO operation

8. We support the conclusion of Ofgem that distributors should remain responsible for real-time operations and there is no need to legally separate or create independent DSOs. However, there are limitations with the Input Methodologies that need to be addressed to provide incentives for the evolution of cost-efficient DSOs.

   The current Input Methodologies that apply to regulated entities under Part 4 of the Commerce Act are suited to monopoly infrastructure providers. Regulated entities are effectively limited to earning profits based on their invested capital multiplied by a fair rate of return. This method of regulation is appropriate for a Distribution Network Operator (DNO) but is unlikely to be appropriate for a DSO.

9. In a DSO context, the distributor will be acting more as a service provider than an infrastructure provider. The DSO's value is likely to be derived more from intangible assets, such as data, systems, and intellectual property. Ensuring a fair return that replicates a comparable market environment may require an evolution of the regulatory settings.

10. It is unlikely to be optimal for each distributor to manage DSO functions on their network. Some consolidation of DSO functionality is desirable, but we question whether the current IRIS incentives are strong enough to encourage distributors to pursue the efficiency benefits that consolidation could provide.

There are some changes required to the Input Methodologies to support DER enablement modes

11. As DSO operations evolve, it Is essential there is regulatory alignment across the industry. The current Input Methodologies will need to be modified to recognise changes to pricing methodologies where we expect traditional load control tariffs will be replaced, or augmented, by flexibility services. Flexibility services are likely to require more targeted and dynamic price signals that are not accommodated within the traditional regulatory price-setting framework.

12. We support the Future Network Forum's vision of Distributed Energy Resource (DER) enablement modes (Price Mode, Contract Mode, Utility Mode, and Emergency Mode). Distributors have historically operated in 'utility mode' and are increasingly engaging in 'contract mode' through contracts with flexibility service providers.

13. The progression towards 'price mode' for flexibility as a logical next step. Targeted network signals and prices / rebates to flexibility service providers to elicit a response during peak periods could provide a more efficient response than contract mode. However, for revenues from prices to be counted towards allowable revenues, the prices must be set at the beginning of the regulatory year. The Input Methodology definitions of 'price' needs to be amended to allow dynamic prices to be discovered by the market. This change will unlock benefits from market trading platforms that are currently being investigated by distributors.

Appendix A Format for submissions

Submitter	Aurora Energy

Questions	Comments
Q1. Do you agree with the explanation of the distribution system operator (DSO) role/ entity, and the explanation of the distribution system operation (DSO) functions that one or more DSO entities would be required to perform?	The two definitions provided, EPRI vs Ofgem have very different base contexts. EPRI is purely DSO, Ofgem is combined DNO and DSO. We agree that the two cover what we understand the DSO role to be, but the Ofgem definition includes functions that are clearly DNO responsibilities in addition to the DSO responsibilities and are leveraging the efficiency of combining the functions. We are maintaining an open mind about the role of aggregators in the future operating model. As consumers adopt new technologies households may in time become capable of directly responding to network signals and the role of aggregators may be reduced. It is important to distinguish the value aggregators are providing through scale vs the value aggregators are providing through technical capability.
Q2. Do you think we are correct that the themes we identified in submissions to the initial consultation paper mean we should focus mostly on system operation at the distribution level, and on the new functions required for effective distribution system operation?	Yes, we agree with the themes identified by the Authority. We support the view that DSO functions may be provided by third parties or procured from other distributors. However, we question whether the current regulatory framework provides sufficient incentives for distributors to pursue the most cost-effective form of DSO delivery. Fundamentally, the Input Methodologies are designed for monopoly infrastructure providers, with returns linked to the value of a distributor's Regulated Asset Base (RAB). The future DSO operating model could mark a shift from distributors

	operating as infrastructure providers, to distributors acting as service providers. DSO operators may see a reduction in their physical asset base (RAB), but an increase in intangible assets such as an increase in the knowledge and expertise of its staff and systems. The existing Input Methodologies might not provide the level of fair return that a shareholder operating in a market-based service industry would expect.
Q3. Do you think we have accurately covered the main changes to the distribution system in this section? If not, what have we missed or where have we gone wrong?	Yes, we agree that the changes to the distribution system have been accurately covered. The Authority should also note the limitations of the Input Methodologies when it comes to dynamic, or market-based dispatch of flexibility. Distributors are required to publish prices before the regulatory year commences in a price x quantity format. In the case of dispatching flexible DER or flexible load this means that the distributor needs to set the price, rather than using a dynamic market.
Q4. Do you agree with how we have defined the problem, as the need for a more coordinated framework of integrated system operation?	Yes, we agree with the problem definition.
Q5. In your view, what aspects of the Australian and British deliberations around DSO models are relevant to New Zealand?	At this early stage in the evolution of DSO and DNO roles and responsibilities we encourage the Authority to keep an open mind about the organisational degree of separation. We note that Ofgem did not require DNOs and DSOs to be separate legal entities and our view is that this is a sensible approach.
Q6. What do you think about the direction of research conducted in New Zealand by bodies such as the ENA, NEG and SIDG on the challenges of preparing to perform DSO functions?	We support the research of the ENA to date. In particular, we support the four enablement modes of DER and feel this is a useful way of framing how operations will need to respond to certainty requirements.

	We note that the Commerce Commission's price-setting regulation may need to evolve to unlock the full benefits of the price mode.
Q7. What is your view about the need for an independent DSO (iDSO)? Should we consider an iDSO now as an option to perform all DSO functions, or a subset of functions related to market facilitation? Or can that decision wait until the market for flexibility services is more developed?	Our view is an independent DSO is not required at this time. Distributors are currently operating primarily in the utility and contract led price modes and there is no significant role that can be played by an iDSO until a price-led market evolves.
Q8. What do you think about the three DSO models proposed by the Authority?	The three models broadly capture the options available.
Q9. Do you prefer one model over the others?	We support the hybrid model. The hybrid model places distributors and Transpower in the roles that are best suited to their knowledge and expertise.
Q10. Given the hybrid model can take several forms, what do you think would be the best allocation of DSO functions between the TSO and one or more distributors as DSOs?	The entity with physical ownership of the point of constraint is in a better position to manage DSO functionality at that point of constraint and to better understand the value of DER services for consumers. The total TSO model will have limited local optimization capability, and we see local optimsation (below the zone substation level) as the greatest potential for cost deferral without compromising network security.
Q11. How would you rank the DSO models in terms of enabling the process of price discovery in the market for flexibility services to approach the wholesale market ideal of security-constrained economic dispatch?	We note that products like 'Our Energy' are already being pursued by distributors. These products will allow price discovery in the market, albeit regulations will need to evolve to allow price to be recognised within distributors revenue allowances.