Via email: FSR@ea.govt.nz

11 April 2024

**The future operation of New Zealand's power system**

Mercury welcomes the opportunity to submit on the Electricity Authority's (the Authority's) consultation paper *The future operation of New Zealand's power system*, 15 February 2024 (the Consultation Paper).

Mercury agrees with the Authority's proposition that the *future is uncertain, but we do know that coordinating the operation of New Zealand's power system will need to evolve to accommodate and facilitate the changes occurring in the electricity sector.*[1] This uncertainty about the future raises a question about the decisions and actions that should be taken today that support the Authority's statutory objective, which is *to promote competition in, reliable supply by, and the efficient operation of, the electricity industry for the long-term benefit of consumers.* [2]

In addition, this uncertainty in the system operation evolution also requires public and government confidence because, as MDAG states, this confidence is foundational in enabling it to deliver reliable and clean supply at least cost for consumers.[3] Maintaining this confidence as the system operations evolves requires transparency and the assurance that the system operation will perform as required.

Mercury agrees that the points listed in the Consultation Paper that the Authority is particularly interested in are consistent with this statutory objective, which are:[4]

a) *the efficiency and reliability of New Zealand power system operation in the future*

b) *how changes to power system operation in the future might affect consumers and industry participants*

c) *how best to enable consumers to become 'prosumers' via their ownership of distributed energy resources (DER), in a way that promotes a secure and resilient power system.*

These are important points to consider.

However, another important consideration is how decisions and actions regarding the coordination of the operation of the power system can promote competition across electricity sector now and in the long run. Promoting competition across the supply chain will lead to better outcomes for consumers, particularly where there is uncertainty regarding the future opportunities for the system operation in the Consultation paper. [5]

Given this uncertainty, in general terms this means taking actions that enable the development of a range of system operation options in the future, rather than limiting the range of future options. Furthermore, it means promoting investment in innovative solutions based on the technological drivers identified in the Consultation Paper, and allowing competition to determine how the system operation evolves and the options consumers value.

For instance, as the Authority notes, the management of day-to-day power system operations, including the control of frequency, voltage and network loading, will be increasingly automated. There is presently uncertainty, though, about how this automation might develop over the long term. Even so, the Authority suggests at first several

[1] Consultation Paper, page 2
[2] Electricity Authority's Statement of Intent, 1 July 2020 – 30 June 2024, page 9
[3] Market Development Advisory Group (MDAG) report, *Price discovery in a renewables-based electricity system, Final Recommendations Paper,* paragraph 1.53
[4] Consultation Paper, page 5
[5] As the Authority notes in its Statement of Intent, page 9, "*Competition helps ensure New Zealanders have plenty of choice about how they get and use electricity and improves their access to competitive pricing. We encourage competition in all electricity-related markets right across the supply chain, taking into account long-term opportunities that will lead to better outcomes for consumers.*"

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preliminary steps are likely to be needed, such as greater communication between the system operator, distributors, and parties operating on networks. Taking a least regrets approach to greater communications that would enable competitors to develop options for addressing systems operations in the future would promote competition.

The Consultation Paper also raises the question regarding whether there are significant conflicts of interest associated with network ownership, network operation and network planning. Rather than focus on conflicts of interest, consideration should also be given to whether proposed institutional arrangements that integrate system and network operations would promote competition in the future. For instance, integrating distribution system operation with distribution networks might impact the emergence of competition, particularly as distribution networks are regulated as natural monopolies. [6]

In the long term an increasingly complex network ownership, network operations and new planning functions, coupled with the evolving technology drivers identified in the Consultation Paper suggests that consideration should be given in the future to the institutional arrangements of these functions with a view to promoting competition more generally. That is, evolving technology drivers may enable a number of approaches or strategies for coordinating systems operation. A starting point, therefore, for addressing the question of coordination may be to map out the different strategic pathways that system operations may develop in order to identify common least regret measures at this time that would promote competition in, reliable supply by, and the efficient operation of, the electricity industry for the long-term benefit of consumers.

Further detail is provided in the attached response to the Authority's consultation questions.

We look forward to continuing to engage with the Authority, the industry and key stakeholders on the future operation of the power system.

Yours sincerely

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[6] Under Part 4 of the Commerce Act 1986 (Part 4), EDBs supplying electricity from the national grid to homes and businesses across Aotearoa New Zealand are regulated as natural monopolies. See *Commerce Commission, Default price-quality paths for electricity distribution businesses from 1 April 2025, Proposed Process,* 25 May 2023, paragraph

**Annex: Mercury's response to Authority's consultation questions**

| Authority's Consultation Question | Mercury's Response |
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| Q1: Do you consider section 3 to be an accurate summary of the existing arrangements for power system operation in New Zealand? Please give reasons if you do not agree. | Mercury considers that section 3 provides a reasonable summary of the existing arrangements for power system operation in New Zealand. |
| Q2: Do you agree that we have captured the key drivers of change in New Zealand's power system operation in section 4? Please give reasons if you do not agree. | Mercury agrees with section 4 summary of the key technological drivers of change in the operation of the power system in general – i.e.<br>- generation technology<br>- consumer technology<br>- operational technology<br>- information technology<br>- climate change and extreme weather events<br>- electrification of the energy system<br>These drivers narrowly focus on the technology, and suggest that the process of market evolution and power system operation will be largely dependent on technological developments.<br>There are, however, a broader set of commercial drivers as well as the need for public and government confidence that have and will continue to motivate the evolution of the operation of the power system. These broader drivers should be taken into consideration, particularly when assessing the impact decisions on the energy trilemma, competition, and efficiency. |
| Q3: Do you have any feedback on our description of each key driver in section 4? | See response to Q2 for our feedback on key drivers in section 4. |
| Q4: What do you consider will be most helpful to increase coordination in system operation? Please provide reasons for your answer. | As noted above, looking forward, the evolving technology drivers may enable a number of approaches or strategies for coordinating systems operation. A starting point for addressing this question of coordination may be to map out the different strategic pathways that system operation may evolve in order to identify the common least regret measures would continue to promote competition in, reliable supply by, and the efficient operation of, the electricity industry for the long-term benefit of consumers.<br>To illustrate the general concept, here are three generic coordination scenarios that might evolve:<br>- single point of coordination drawing on energy supply and demand information collected across networks and behind the meter<br>- combination of the national and regional points of coordination which draw on supply and demand information within each network and |

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| | maintain power quality standards at the interface points<br>- combination of national and regional system operator coupled with ICP located points of coordination that maintain power quality standards at interface points |
| Q5: Looking at overseas jurisdictions, what developments in future system operation are relevant and useful for New Zealand? Please provide reasons for your answer. | It is not clear whether or not specific developments seen in other jurisdictions are specifically relevant for New Zealand at this point in time. While the developments overseas are interesting and useful to monitor, different countries each have their own different characteristics which raises a question as to whether measures adopted in one country are relevant to New Zealand. |
| Q6: Do you consider existing power system operation obligations are compatible with the uptake of DER and IBR generation? Please provide reasons for your answer. | The present significant investment in DER and IBR generation would suggest that in general the existing power system operation obligations are compatible with the current pace of uptake, subject to incremental changes to the obligations to reflect technological developments.<br>However, looking into the future this may change at some point with the level of DER and IBR generation. In order to inform how it might need to change, a more strategic work is required to identify how system operation requirements might evolve. |
| 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 | Mercury supports greater sharing of information between Transpower and EDBs in order to promote competition, as well as efficient coordination across network planning, investment and operations. Information sharing should promote individual party's incentive to invest.<br>Mercury would be concerned, however, if increased information sharing resulted an increasingly centralised, rigid planning and operations processes. Such an outcome would be detrimental if it slows investment decisions and reduces efficiency more generally. |
| Q8: Do you think there are significant conflicts of interest for industry participants with concurrent roles in network ownership, network operation and network planning? Please provide reasons for your answer. | See comments in the letter for response to this question. |
| 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 for your answer. | Mercury fully supports the Authority's further work on the future operation of the power system. |