25 June 2025

Electricity Authority
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Submitted via email to decentralisation@ea.govt.nz

Orion submission – Decentralisation green paper

Introduction

1. Orion welcomes the opportunity to submit on the '*Decentralisation green paper*' ("green paper").[1]
2. Orion owns and operates the electricity distribution infrastructure in central Canterbury, including Ōtautahi Christchurch city and Selwyn District. Our network is both rural and urban and extends over 8,000 square kilometres from the Waimakariri River in the north to the Rakaia River in the south; from the Canterbury coast to Arthur's Pass. We deliver electricity to more than 230,000 homes and businesses and are New Zealand's third largest Electricity Distribution Business (EDB).
3. We have reviewed the consultation paper, and our specific responses to the questions posed by the Electricity Authority ("Authority") are set out below.

Key submission points

4. Orion's Group Strategy begins with our purpose: *Powering a cleaner and brighter future with our community*, and talks to the impacts we want to make on regional prosperity through energy equity, sustainability and energy security.[2] Fundamentally, we aim to ensure customers in our region have safe, reliable, and resilient access to New Zealand's electricity system at the lowest total lifecycle cost. We don't see this goal changing in any possible future, but we acknowledge that how we deliver this goal may evolve as the energy landscape transforms.
5. Orion agrees that the electricity sector is in the midst of a major transformation, driven by net zero 2050 decarbonisation targets, increasing digitalisation to manage complex network and grid operations, decentralisation as distributed generation costs become economically viable for more consumers, and democratisation as customers demand more choice and control over their energy supply.

[1] Decentralisation green paper
[2] Orion Group Annual Report 2024, page 4.

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6. However, Orion submits that the Authority's green paper represents an optimistic scenario that may partially or fully be implemented and is a scenario that represents only one of many possible futures for New Zealand. We question whether the Authority has applied equal rigour to analysing alternative future scenarios to identify the lowest-cost, least-regrets, pathway for consumers.

7. For example, we observe that decentralisation will likely still require significant centralised assets. New Zealand is experiencing this dual development simultaneously – while we see increasing amounts of consumer distributed generation installs, we are also seeing increasing amounts of centralised and semi-centralised assets, which includes both large-scale embedded generation connecting to distribution networks[3] and generation planning to connect to Transpower's transmission system.[4] Australia provides a compelling overseas example about how this may look in New Zealand. Despite having the world's highest rooftop solar uptake,[5] new centralised and semi-centralised assets are being developed at a rapid pace.[6]

8. Orion submits that the Authority should ensure its regulatory framework enables all desired and possible outcomes, rather than committing the sector to a single highly decentralised pathway, before determining it represents the lowest-cost, least regrets, option for consumers. For example, the green paper fails to address New Zealand's energy challenge: seasonal energy adequacy.[7] The decentralisation focus appears to target intraday peak management, which is not a primary system constraint. If New Zealand cannot resolve seasonal fuel adequacy challenges, electricity prices will remain high and volatile.[8]

9. Orion submits that the green paper's alignment with the Government Policy Statement on Electricity appears selective, particularly regarding technology and supply neutrality, and the primacy of carbon pricing as the decarbonisation driver.

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[3] Orion has more than 1,100MW of large-scale distributed generation applications in our connection queue, with 150MW already under construction.

[4] Transpower's Connection Pipeline, as of May 2025, shows that there are a total of 90 projects, with the potential to add a total of 16,114MW to New Zealand's electricity supply. Transpower's Whakamana I Te Mauri Hiko October 2024 Monitoring Report has identified 6GW of enquiries with combined grid scale solar and battery, and a generation pipeline of 32 GW.

[5] Australia's rooftop solar revolution reaches astonishing new heights, 14 Nov 2024, accessed 29 May 2025.

[6] NEM Capacity to 2049-50 in the "Step Change" scenario in the 2024 Integrated System Plan for the National Electricity Market, AEMO p.11

[7] Seasonal energy adequacy refers to the electricity system's ability to maintain sufficient generation capacity to meet demand during extended periods of low renewable output, particularly during winter months. Unlike intraday peak management which addresses short-term fluctuations, seasonal adequacy challenges can persist for weeks or months.

[8] This challenge is identified by the Authority in a recent consultation paper. Paragraph 2.29 notes that as the system becomes more reliant on intermittent renewable resources, volatility in wholesale electricity spot prices is expected to increase. Rewarding industrial demand flexibility - issues and options paper, page 14.

10. We observe that targeted energy literacy and education programmes can have significant impact, as demonstrated when the Trader Switch rate peaked at 10.54% in March 2012 coinciding with the Authority's "What's My Number" campaign.[9] Orion submits that this demonstrates the Authority's critical role in building the consumer trust and engagement that the green paper identifies as the lynchpin for successful decentralisation.

Question 1: Description of decentralisation and key trends

11. We broadly support the Authority's description of decentralisation. The definition characterises decentralisation as "shifting from" large scale generation, when the reality shows centralised, semi-centralised and decentralised development occurring simultaneously at pace. Orion submits that decentralisation should be framed as evolution "in addition to" rather than "shifting from" centralised generation, reflecting that all forms of development are accelerating simultaneously to meet system needs.

Trend 1: Decentralised or 'distributed' energy resources (DERs)

12. Orion submits that the Authority must recognise that it is not just DERs that empower consumers – it is DERs and an EDBs' connection to them. The strength and benefit of an EDB lies in facilitating these opportunities for our consumers within the interconnected energy system, where benefits for consumers cannot, and will not, materialise if the underlying distribution network cannot support them.

13. The Authority's vision for a more decentralised electricity system reduces reliance on Transpower and generators, but significantly increases dependence on EDBs to facilitate local distribution system operation and coordinate distributed resources. Realising these benefits will require substantial and ongoing investment in strong local networks to support peer-to-peer sharing, local markets, community batteries, and virtual power plants (VPPs). To deliver this enhanced network capability, EDBs will need to invest in additional hosting capacity, smart network technologies, and advanced system management. These investments are likely to increase fixed costs or necessitate alternative funding mechanisms – costs that typically fall on consumers, particularly those unable to afford their own DERs.

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[9] NZ Herald, Number of people changing electricity suppliers slumps following 2011 campaign, 23 July 2017, accessed 26 May 2025.

14. We note a significant gap between the Authority's 2040 assumptions outlined in the green paper and DER uptake forecasts developed by the Ministry for Business, Innovation and Employment ("MBIE"). Under both the Innovation and Environmental scenarios[10], MBIE forecasts that the total number of residential solar PV systems expected to be in place by 2040 to be 249,726 ICPs.[11] This is only 12% of residential ICPs in New Zealand.[12]

15. We have modelled future energy scenarios to set out possible pathways for the future of energy in our region. In our consumer and place-based transition forecast, by 2040, 11% of residential ICPs on our network are expected to have a solar system, with around half of those ICPs also installing a battery system. This would supply around 171 GWh of energy annually, with residential demand of around 1,400 GWh.[13]

Trend 2: Decentralised or 'democratised' energy planning, decision-making and ownership

16. We question where the decision-making authority will ultimately sit and how EDBs fit within governance structures. We note there will be difficulties and trade-offs required by current Participants to unlock the Authority's future scenario, with EDBs playing a coordination role between consumers, communities, and the wider system.

17. Orion submits customer segmentation will be essential to understand diverse drivers, wants and needs. Some consumers prioritise resilience, others income generation, with business-oriented versus community-oriented people having different drivers and access to capital. Our experience through the Community Energy Activator pilot confirmed that communities prefer collective participation models once knowledge gaps are addressed.[14] Consumer needs are not universal and the value stack for each connection is unique, with some prioritising environmental benefits versus local sharing opportunities.[15]

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[10] The innovation scenario is defined in the EDGS 2024 as "Current economic trends continue, alongside accelerated technological uptake and learning rates." The Environmental scenario is defined as "New Zealand targets more ambitious reductions in emissions." Electricity Demand and Generation Scenarios (EDGS): Results summary, page 10.

[11] EDGS 2024 Assumptions

[12] As of 30 April 2025, there are approximately 1,991,935 residential ICPs in New Zealand.

[13] This scenario is based on the MBIE EDGS Environmental scenario, and is consistent with their results of 2.9 TWh generation from rooftop solar and gross residential energy demand of 86 PJ (24 TWh). For further details on our future energy scenarios, please refer to our Future Energy webpage.

[14] See https://www.ceactivator.co.nz/ for further details on our Community Energy Activator project Orion delivered with both Ara Ake and Community Energy Network.

[15] As outlined in our submission on the Energy Competition Task Force initiative 2A, consumer research during our Resi-Flex project identified that not all consumers are motivated by the same factors. For example, while some consumers are motivated by financial incentives, others prioritise simplicity, environmental benefits, or energy independence.

Trend 3: Digitalisation of 'smart' systems

18. We note that the paper does not adequately address the Distribution System Operation ("DSO") role, despite its potential importance in coordinating decentralised resources effectively. While EDBs currently invest in real-time monitoring and automated control systems, the evolution toward a DSO function presents both significant opportunities and challenges that will require substantial capability development. This includes advanced forecasting and optimisation algorithms, real-time market coordination with thousands of distributed resources, sophisticated orchestration management, two-way communication protocols with aggregators and traders, and real-time price signal dispatch across networks.[16]

19. Orion submits that realising these digital capabilities represents a substantial evolution from current EDB systems and will require appropriate regulatory support and funding mechanisms to ensure successful implementation. The Authority should prioritise developing a clear framework for how DSO functions will be enabled, funded, and regulated to support the transition to a more decentralised system.

Critical success factor: Consumer trust and engagement

20. We note that a significant number of consumers, 45%, have been with their current electricity provider for more than five years.[17] This aligns with EMI switching trends, which show that as of 30 April 2025, the 12-month rolling rate for Trader Switch was only 5.48%, with Move in switch at 13.41%; all switch types combined was 18.92%. These figures demonstrate that a significant majority of customers do not actively seek to switch retailers. This raises questions about the Authority's assumptions regarding consumer appetite for increased electricity market participation.[18]

21. We observe that the 12-month rolling rate for Trader Switch rate peaked at 10.54% on 31 March 2012, coinciding with the Authority's "What's My Number" campaign, which encouraged people to check and change their retailers for better deals. This demonstrates the potential impact of targeted energy literacy and education programmes, and leads us to challenge the Authority to carefully consider and plan for its critical role in building consumer trust and engagement that is described as the lynchpin of this entire green paper.[19]

22. Orion submits that the benefits outlined in this green paper rely heavily on increased engagement, understanding, trust and collaboration between the energy sector, consumers, communities and local stakeholders. Without substantial investment in consumer education, the consumer participation assumptions underpinning this green paper may not materialise.

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[16] For further information on the potential models for distribution system operation (DSO) in Aotearoa, please refer to the Electricity Networks Aotearoa (ENA).

[17] https://www.consumer.org.nz/articles/record-savings-available-to-people-who-switch-power-providers

[18] EMI Switching trends report

[19] NZ Herald, Number of people changing electricity suppliers slumps following 2011 campaign, 23 July 2017, accessed 26 May 2025.

Question 2: Potential outcomes and benefits

23. We acknowledge the potential benefits outlined, but Orion submits that the Authority risks presenting an overly optimistic scenario without adequate consideration of implementation complexities and costs. The benefits described require substantial consumer behavioural modification and sustained policy support across electoral cycles, while existing within complex system interdependencies.

24. We are particularly concerned about the emphasis on highly localised pricing mechanisms, which could create significant inequitable outcomes. In such a model, rural customers would systematically pay more than urban customers, and customers in areas with older network infrastructure would face higher costs during equipment replacement. To recover costs for ongoing network operation and maintenance, EDBs apportion costs across different consumer groups based on factors such as demand, usage profiles and the cost to serve each group. The Authority's focus on highly localised pricing risks undermining established equity principles, as set out in the Distribution Pricing Principles, which require that pricing should not unduly discriminate between consumer groups and should avoid inequitable impacts where practicable.[20]

25. In addition to these equity concerns, Orion submits that the Authority must recognise that achieving the stated benefits requires continued investment in robust distribution networks to support peer-to-peer sharing, local markets, community batteries and community VPPs. To support this growth, EDBs will either need to increase fixed costs or implement alternative funding mechanisms.[21] This will result in a tipping point where export services require direct charging if conveyance costs lack appropriate recovery mechanisms.[22]

26. We question whether the described benefits address New Zealand's real energy security challenges. New Zealand is writing the playbook for renewable energy transitions globally, but we still rely on fossil-fuelled thermal generation during winter peak demand periods and when there is insufficient water, wind and sun. Transpower's draft Security of Supply Assessment highlights that winter energy margins could fall below system security standards as early as next year, primarily due to rapidly declining indigenous natural gas supply.[23]

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[20] https://www.ea.govt.nz/industry/distribution/distribution-pricing/

[21] Boston Consulting Group's paper Delivering the Energy Transition Will Come Down to the Wires identifies that annual investment in transmission and distribution networks will need to be 88% higher from 2020 to 2030 than it was from 2012 to 2021. The report also shows grid companies are facing increasing debt levels, with Australia and New Zealand experiencing net debt/EBITDA ratios rising from 5.60x to 7.70x between 2017 and 2023, limiting their capacity to finance the required infrastructure investment.

[22] Australia has introduced export charges to assist with grid management, managing network stress, ensuring fair cost allocation, and to encourage self-consumption. For further details, see AER - Export Tariff Guidelines.

[23] Draft Security of Supply Assessment, page 6, section 1.2, Summary of 2025 Margin Analysis.

27. Orion submits that decentralisation may not solve our seasonal energy adequacy challenge, which requires firm, dispatchable generation rather than additional intermittent distributed resources. The tight interaction between electricity and gas wholesale prices, particularly when hydro storage is low, is already putting considerable commercial pressure on industries and households, threatening economic viability and undermining the affordability outcomes that should underpin any energy transition strategy.

Question 3: Challenges to decentralisation

28. Orion submits that we agree with the challenges identified.

29. A challenge not addressed by the Authority is the apparent lack of coordination with broader energy system planning work. The green paper appears to exist in isolation from other energy policy work, when New Zealand faces distinct challenges requiring integrated solutions. To illustrate the need for coordinated approaches, multiple comprehensive energy strategies have been released recently by various organisations, including the Energy Transition Framework,[24] the Business New Zealand Energy Council's bipartisan energy strategy,[25] and Rewiring Aotearoa's electrification policy manifesto.[26]

30. Under the 2014 Memorandum of Understanding between the Authority and MBIE, the Authority's role is as an independent regulator focussed on electricity market competition, reliability and efficiency, while MBIE is responsible for developing and coordinating national energy policy and strategy, including the integration of energy sectors.[27] Orion submits that while the Authority has legitimate interests in understanding decentralisation trends for regulatory purposes, this green paper addresses broader energy system challenges requiring coordinated policy leadership from MBIE. Elements of this paper relating to local government roles, system-wide transformation, and cross-sector coordination extend beyond electricity market and industry regulation into territory that should be led by MBIE, with the Authority focussing on implementing its regulatory framework within a coherent national energy strategy.

31. Orion submits that clarification is needed on whether the Authority and MBIE consider their 2014 Memorandum of Understanding still operative, given the coordinated approach it envisaged for avoiding overlaps and ensuring clear role delineation in energy policy development.

Question 4: Opportunity statement

32. We question several aspects of the opportunity statement. The claim that this approach "ensures fair and secure access to energy" overstates certainty. This outcome is dependent on multiple assumptions, rather than providing guarantees.

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[24] See https://www.poweringchange.nz/ and https://www.poweringchange.nz/assets/assets/2025-04_Energy_Transition_Framework.pdf.
[25] See https://bec.org.nz/energy-sector-releases-blueprint-for-nzs-energy-strategy/.
[26] See https://www.rewiring.nz/manifesto#policies.
[27] https://www.ea.govt.nz/documents/479/MoU_between_MBIE_and_Electricity_Authority_2014.pdf.

33. Terms like “local energy markets” and “locally optimised systems” require clearer definitions. If “local” means street-level implementation, substantial additional investment in systems and tools would be required, potentially undermining lowest-cost objectives and reducing retailer competition in high-cost service areas.

34. Orion submits that the opportunity statement’s alignment with the Government Policy Statement on Electricity is selective and potentially inconsistent with core principles. The GPS explicitly states: “the rules of the market do not favour one technology or solution over any other.”[28] The Authority states that this green paper “will contribute to the Authority’s work to determine the regulatory framework required… in a more decentralised electricity system.”[29]

35. The GPS also emphasises carbon pricing as the primary decarbonisation mechanism (paragraph 31(c)) and explicitly states the Authority should not prefer one supply form over another (paragraph 31(d)). The green paper's focus on specific distributed technologies appears inconsistent with the Government’s policy directive.

Question 5: Additional feedback

36. Orion submits that before committing New Zealand to this decentralised pathway, the Authority should conduct rigorous comparative analysis across multiple scenarios to identify the genuinely optimal approach for achieving net-zero by 2050. This analysis should quantify the proportion of generation and storage that will be economic at centralised versus decentralised scales at different points in the transition, rather than assuming decentralisation is inherently preferable. Without this quantification of benefits, there is a real risk that the pursuit of decentralisation becomes an end in itself rather than a means to achieving reliable, affordable, zero-carbon electricity. This risks inefficiency and could make electricity unaffordable during the transition. Ensuring a level playing field for the most efficient investment in providing energy to customers must be the goal, rather than picking decentralisation as a predetermined ‘winner’ through regulatory incentives.

37. Orion submits that policy stability across political cycles is essential to build investor confidence and unlock both domestic and international capital. The energy transition requires clear, consistent, and durable policy settings that avoid conflicting objectives, remain technology-agnostic, and use robust market signals such as carbon pricing to drive efficient outcomes.

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[28] Government Policy Statement on Electricity, paragraph 29(e), page 7.

[29] Decentralisation green paper, paragraph 1.7, page 5.

38. We note a potential contradiction between current Government policy direction and this green paper's expectations of local authorities and councils. The Government has recently announced reforms that explicitly refocus local councils on delivering essential services and core infrastructure, with then Local Government Minister Simeon Brown stating that councils must "do the basics brilliantly, rather than pursuing expensive extras that burden ratepayers." The reforms will remove references to the 'four well-beings' from the Local Government Act 2002, restoring a purpose focused on "fixing pipes, filling potholes, and delivering core local services" while "avoiding duplication of roles with central Government." The Minister has emphasised that "councils must focus on roads, rubbish, and reliable infrastructure" with "no room for wasteful spending."[30]

39. Orion is supportive of the need for local area energy planning initiatives and has been actively involved with the first steps in such planning in Canterbury, as well as leading New Zealand's first Community Energy Activator pilot to support community-scale energy project development.[31] Through this experience, we recognise the value of local energy planning that reflects regional context and opportunities. However, Orion submits that expecting local councils to assume expanded energy planning and decision-making responsibilities will potentially conflict with the Government's direction to constrain local authority and council roles and focus on core services. As discussed in paragraphs 28 and 29, regarding the need for coordinated policy leadership from MBIE, clear central Government direction and support will be required to resolve this contradiction and enable local councils to effectively assume the energy planning responsibilities envisioned in this green paper.

Concluding remarks

40. Orion submits that while we support exploring decentralised energy futures, this green paper presents an overly optimistic view that may not represent the lowest-cost pathway for consumers. We expect equal rigour to be applied to all possible scenarios before committing the sector to any specific programme of work.

41. The transition to any decentralised future will ultimately depend on robust distribution networks to enable the benefits described. EDBs have a crucial role that requires regulatory support and appropriate funding for facilitating this transition while maintaining reliable, affordable, lowest lifecycle total-cost electricity supply for all customers.

42. The Authority's role in both educating consumers, and coordinating sector participants toward an optimal outcome for consumers in the long term cannot be underestimated.

43. If you have any questions or queries on aspects of this submission which you would like to discuss, please contact us on 03 363 9898.

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[30] https://www.beehive.govt.nz/release/government-getting-local-government-back-basics

[31] See https://www.canterburymayors.org.nz/may-update-chief-executives-forum/ and the draft Canterbury Regional Energy Inventory.

Yours sincerely

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