Energy Resources Aotearoa
POWERING A BETTER NEW ZEALAND TOGETHER

energyresources.org.nz
energyskills.org.nz
energymix.co.nz
PO Box 25259, Wellington 6140

25 June 2025

Electricity Authority

via e-mail: decentralisation@ea.govt.nz

Submission on Green paper – decentralised electricity system

Introduction

1. Energy Resources Aotearoa is New Zealand's peak energy sector advocacy organisation. We represent participants from across the energy system, providing a strategic sector perspective on energy issues and their adjacent portfolios. We enable constructive collaboration to bring coherence across the energy sector through and beyond New Zealand's journey to net-zero carbon emissions by 2050.

2. This document constitutes our submission on the green paper about moving towards a 'decentralised' electricity system entitled - *Working together to ensure our electricity system meets the future needs of all New Zealanders,* dated 30 April 2025. We provide responses to the questions after some general comments on decentralisation.

Key messages

3. Energy Resources Aotearoa supports decentralisation as part of the future electricity system, but any shifts must be efficient, *integrated* with large-scale generation and firming to ensure reliability and equity and operationally optimised. New, small-scale technologies are increasingly available and need integration with the grid. We support this early thinking on potential benefits and risks.

4. It is important to note that the 'system' presented in this green paper is not the full electricity system. Retail and electrification need to be viewed in the context of the national grid, encompassing all generation, access needs, demand, and supply. What is presented is a small fraction of that.

5. Equitable access to the grid, to new technologies and affordable prices will be the major challenge for electrification. It would be naïve to assume that all New Zealanders will have access to rooftop solar, electric vehicles, and the resultant two-directional pricing these might offer in the future vision for 'decentralisation'.

6. In our view, language like decentralisation and democratisation provide an unhelpful, indeed pejorative and normative characterisations of the challenge. It is really about *augmentation* of the current system, with *additional* energy sources and the market opportunities they present.

7. All these additional energy sources and opportunities are much needed and valuable, but they are small in scale and cannot solve the bigger picture issues. We need more large-scale flexible generation, which can, in turn, be complemented by the smaller scale solutions presented in the green paper.

8. Any further work undertaken by the Electricity Authority on decentralisation must be based on a proven market need (a clearly identified market failure) with demonstrable, broad net public benefits. It would be disappointing if the benefits of decentralisation only reached those who can afford early adoption, in a community of interest, at the expense of overall energy security.

Submission

9. We agree that a move towards greater electrification is inevitable and already happening for commercial and economic reasons. It is positive to see the thinking and planning to manage the risks associated with the greater risk of intermittency. A growing proportion of wind and solar generation, together with a greater reliance on hydro for firming, can lead to energy and price spikes, and at worst, blackouts.

10. Spain recently suffered a widespread blackout lasting longer than 11 hours. Their system suffered a catastrophic failure due to a rare out-of-phase inertia resulting from its significant reliance on wind and solar energy. New Zealand cannot pretend that wind and solar alone will solve our energy system problems. *New generation must be firmed*. It is extremely unlikely that this will be done in an affordable way in the absence of thermal fired power stations.

What is meant by decentralisation?

11. Decentralisation is a widely used term to describe localised and democratic decision-making. The paper describes decentralisation for the electricity sector as '*shifting from large-scale electricity generation at a small number of sites across the country, to smaller-scale renewables and other distributed energy resources (**DERs**) located closer to consumers*'.

12. We think this is a dangerously simplistic characterisation of the shift already underway. New Zealand will always need large-scale generation, and more of it. Demand for electricity is expected to increase by two-thirds by 2050, and the Government has made commitments to 'double renewable generation capacity by 2050'. This puts small-scale, local energy resources into a different perspective than what has been presented in the paper.

13. The diagrams on pages 6 and 9 appear to present the 'system' but only show the new generation, small-scale end of the system. We would like to see the Electricity Authority redraw a diagram in context of the national grid, at a minimum, and it would be helpful to have a diagram of the projected demand that the national energy system is challenged to meet by 2050.

14. It is important to illustrate that decentralised, or 'democratised' energy will not and cannot enhance the welfare all New Zealanders equally. We have seen this before in other examples of decentralisation. The aim of decentralisation is usually to empower end-users of a system. But it doesn't impact evenly. In fact, it can make the most vulnerable users worse off. We provide a salient, high-level example from our education system below.

Learning from other sectors – an example from education

15. An early and well-known example of decentralisation in New Zealand is the 1989 reforms of the education system that introduced Tomorrow's Schools. The reforms established individual governance arrangements in the form of Boards of Trustees to administer each school. This model was established in response to a centralised model that had become hindered by slow decision-making, bottlenecked resources, and inflexibility, preventing schools and teachers from delivering the education that best suited the needs of their students and communities.

16. Thirty years later, the Tomorrow's Schools system was reviewed because it had delivered highly variable education; some schools were not well-resourced or were poorly performing, the capability among Boards and staff varied widely, and student achievement across the country was generally trending downward. The central frontline supports had shrivelled while the bureaucracy had ballooned, the cost of provision had risen steeply, and schools were essentially 'islands' left to fend for themselves.

17. The point of this illustration is that decentralisation carries with it risks and opportunities, and system reformers should not blindly believe decentralisation will solve all problems, or that it is essentially 'good'. There will always be a need for regular revision of system performance, drawing on monitoring and evaluation of effectiveness. This should ideally inform step-change improvements rather than reform.

Our key concern is for equitable access to essential energy

18. The cautionary tale from Tomorrow's Schools is that equitable access[1] to necessary resources is not easy to achieve, and decentralisation may worsen outcomes for some of the most vulnerable.

19. There is a lot of talk about rooftop solar, EVs and transformation. These are exciting prospects for households and businesses that can benefit from them, but they generally require a high income, an internal garage, and the resources to invest.

20. DERs do represent an opportunity for future-proofing and additionality. It is not a bad prospect to have technologies that improve daily life and household budgets for some. It is vital that the Authority does not overlook the real possibility that most New Zealanders will not benefit, at least not quickly, and could, in fact, be made worse off.

Questions and answers

Question 1: Do you agree with the description of decentralisation?

21. No – we think it is too simplistic in the green paper and needs to make linkages to the national grid, major generation, transmission, distribution, and demand projections. What is presented in the paper is a small amount of the total energy use of New Zealanders. More importantly, it does recognise the small percentage of New Zealanders that decentralisation is likely to reach.

Question 2: Do you agree with the articulation of the potential outcomes and benefits from decentralisation for consumers?

22. Yes, as broadly described, but we believe there should be recognition that the benefits of decentralisation will not be equitably, or even broadly, shared among New Zealand energy consumers. Some of the risks are picked up in the next section on risks, and we will cover our remaining concerns in that section under question 3, below.

23. We think the benefits and risks need to be presented together, rather than separately, to more realistically reflect the likely overall net impacts on consumers.

24. We would like to see **diesel generators** and **LPG** included under 'enhanced resilience to climate change impacts and other hazards'.

---

[1] When we refer to equitable access, we mean to describe practical, inclusive and market-led sharing of resources among a group of consumers, based on realistic system-wide needs. It is a subjective term that can be interpreted many ways, but we use it here to argue for least-cost, technology agnostic, affordable access for all New Zealanders to the essential electricity they need for their homes and businesses.

Question 3: Do you agree with the articulation of the possible challenges to unlocking the benefits of decentralisation?

25. Yes, and we would like to highlight our top four priorities under this section.

26. Under 'governance design', we see role clarity for decision-making as a key risk. Participatory and 'democratised' decisions are complex and opaque, and if allocated to the lowest appropriate level of authority, could make central decision-making for securing the grid more difficult. We encourage the Authority to consider lessons from other systems to inform the next steps in this part of the work.

27. Under 'grid and systems operations complexity', we see the dynamic and two-way flows as risky for maintaining grid stability. With the increased intermittency of wind and solar being the least likely to reveal 'patterns', it will be up to real-time monitoring and market pricing mechanisms to boil up the needed information to the centre. As discussed in the paper, it will be essential to design standardised products, establish predictable regulatory settings, develop sophisticated management tools, and build a highly skilled workforce.

28. Under 'equitable access to benefits', we have significant concerns. A significant question hangs over the benefits that decentralisation and the vision of 'transformation' can deliver to lower-income households and renters. We will likely also see a 'squeezed middle' of families and businesses who pay their own way (i.e. without subsidies or welfare) in a setting of ever-increasing consumer prices, including their energy bills.

29. Under 'barriers to funding and finance', we consider that subsidies should be avoided, unless targeted at a clearly defined market (or government) failure, as they will only increase the disparity between those who can afford to upgrade or switch to DERs. We have seen this already in the uptake of EVs when subsidies were available – those benefitting were among the highest income households, while lower income households remain reliant on older vehicles that are more expensive to run.

Question 4: Do you agree with the articulated opportunity statement for a more decentralised electricity system?

30. We believe the statement is too strongly worded. We encourage the Authority to reconsider language like 'unlocked, 'empowers', and 'ensures'.

31. We do agree that the 'acceleration' mentioned in the heading is the trigger point for doing this work. We disagree, however, that a 'transformative change' is underway – it is more of an evolution.

Question 5: Any other feedback

32. We would welcome further discussion as this work progresses. It is a good start and a good idea to begin this work now, planning for the accelerated introduction of DERs into the system and how they will need to be managed.

33. We suggest that a case study be included on when it goes wrong, potentially from the perspective of either:

    a a disruption caused by uncoordinated resources and user capability; or

    b widespread inequities among the population caused by uneven uptake of DERs and their associated technologies.

Concluding comments

34. We thank the Authority for the opportunity to comment on this early stage thinking on decentralisation. We would welcome a continued conversation.