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POWERING A BETTER NEW ZEALAND TOGETHER

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Department of the Prime Minister and Cabinet (DPMC)
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## Submission on *Strengthening the resilience of Aotearoa New Zealand's critical infrastructure system*

### Introduction

1. Energy Resources Aotearoa is New Zealand's peak energy sector advocacy organisation. Our purpose is to enable constructive collaboration across the energy sector through and beyond New Zealand's transition to net zero carbon emissions in 2050.

2. This document constitutes our submission on the DPMC consultation document *Strengthening the resilience of Aotearoa New Zealand's critical infrastructure system*. It is intended to briefly raise some key issues and preliminary views, noting that more detailed consultation is expected in early 2024.

### Key points

3. We agree that critical infrastructures are becoming increasingly interdependent, and that to date New Zealand's regulatory approach to resilience has been siloed. Alternatives warrant consideration to ensure our approach remains fit for purpose.

4. However, we caution against rushing to a comprehensive regulatory system for critical infrastructures, or minimum resilience standards, until all options have been thoroughly considered in the New Zealand context. We support proportionate, targeted regulation that addresses specified hazards, threats, and/or policy outcomes while ensuring reservices remain sustainable, accessible, and affordable.

5. It is not necessarily the case that a one-size-fits-all solution is best. Resilience requirements will vary between communities and regions, and in most cases, we expected infrastructure providers themselves are best placed to understand and plan for this. It is much more difficult to do so in a centralised framework.

6. It is important to appreciate that our energy system's resilience is significantly bolstered by diversity of fuels and energy vectors (electricity from multiple sources; bottled and piped gas; and liquid fuels). As our economy is increasingly

electrified, New Zealand should consider the strategic value of retaining fuel alternatives, particularly where alternative fuels also have low-emissions opportunities.

## Submission

7. We commend DPMC for undertaking this work, and prompting a discussion about the resilience of New Zealand's critical infrastructures against the range of threats and hazards they face. Resilient critical infrastructure fundamentally underpins community wellbeing and economic prosperity – this is particularly true of the energy system, the sector that powers all other sectors.

***We support towards more system-level thinking about critical infrastructure, but caution against defaulting to a comprehensive and/or centralised regulatory solution(s)***

8. We agree with the consultation document in that management of risks to critical infrastructure has tended to be siloed. Successive governments have not taken a comprehensive or co-ordinated approach to critical infrastructure, with settings instead evolving as bespoke and asset- or sector-specific. This raises risks of duplication, gaps, and/or inconsistency in the treatment of infrastructure resilience and could limit the extent to which growing interdependencies between infrastructure are understood and managed.

9. We generally support the reforms of the Civil Defence Emergency Management Act 2002 (CDEM Act), which will:

    - replace 'lifeline utilities' with a principles-based definition of 'critical infrastructure', with specific critical infrastructures listed in the Gazette; and
    - strengthen information-sharing requirements between critical infrastructures and government.

10. Energy networks (electricity, gas, and liquid fuels) are currently considered lifeline utilities and we expect these will be included in the new critical infrastructure category.

11. Beyond this initial important step, the consultation document proposes adopting a comprehensive systems-based regulatory approach, consistent with OECD best practice and like frameworks adopted (or proposed to be adopted) in Australia, Japan, the United States, and the European Union.

12. We acknowledge that such a proposal will be developed in more detail, and likely consulted on in 2024. At this point, we wish to register a general caution against rushing toward a comprehensive, all-sectors regulatory solution for critical infrastructure – including setting minimum resilience standards – until all options have been thoroughly considered. We caution this because:

- the costs (economic and administrative) and complexity of a new system-level regulatory function for critical infrastructure, or minimum resilience standards, could be significant, particularly given its interaction with multiple other reforms already underway;

- these proposals could introduce issues of duplication or incoherence with existing sector-specific regulatory management of resilience, hazards, and threats;

- smaller or more (sector) targeted 'right-sized' regulatory approaches might strike a better cost-benefit balance, reduce complexity, and better reflect specific circumstances; and

- as the consultation document itself notes, Australia's reforms are still being implemented and their effectiveness is still to be determined.

13. To this end, we welcome commentary in the consultation document emphasising a focus on 'proportionate and targeted' regulatory tools. Any intervention should seek to address resilience without imposing unnecessary regulatory burdens (both in terms of cost and complexity), and ensuring that services remain sustainable, accessible, and affordable. The consultation document demonstrates awareness of these trade-offs and they should be kept front of mind as this work develops.

14. These trade-offs are particularly important because the energy sector (across electricity, gas, and liquid fuels) is already engaging with a range of significant and complex policy processes. These include:

    - the ongoing resource management reforms, which need to reduce barriers to investment across the sector;

    - the development of a National Energy Strategy and a Gas Transition Plan; and

    - a range of measures in the liquid fuel market, including the implementation of the Fuel Industry Act; the development of policy measures to increase uptake of biofuels and sustainable aviation fuels; and a minimum stockholding obligation.

15. Our general view is that the energy infrastructures are robustly managed and have well-established expertise in managing threats and hazards to their supply chains. We believe the energy sector has a strong record in delivering affordable and reliable energy to households and businesses – and continues to do so while progressively reducing the emissions impact of energy use.[1] For example, since the establishment of the Fuel Sector Co-ordinating Entity, sector participants

1 The energy trilemma is a useful framework for understanding the essential trade-offs between energy security, affordability, and sustainability.

report much smoother and more effective co-ordination in the sector, evident in the Cyclone Gabrielle response.

16. Resilience requirements will vary between regions and communities, and across infrastructures, in ways that are likely difficult or impossible to aggregate at the national level. We suggest infrastructure providers are generally best placed to understand and plan for these needs, engaging directly with their customers. This is particularly the case for privately-owned critical infrastructures (the predominant ownership type in the energy sector) who face commercial incentives to be responsive to customers' resilience needs.

17. Policymakers should explore options to amend existing frameworks and institutions for the energy system, building on what already works well, rather than adding new ones. Co-ordination across critical infrastructures could thus be focused on strategic direction or threat/hazard specific issues.

18. Any new regulatory requirements should be carefully designed to align with a clear policy outcome while preserving incentives to invest and operate. The seven steps laid out in the OECD's Policy Toolkit on Governance of Critical Infrastructure Resilience offer a useful roadmap toward a system-level approach.[2] These steps are:

    - setting up a multi-sector governance structure for critical infrastructure resilience;
    - understanding complex interdependencies and vulnerabilities across infrastructure systems to prioritise resilience efforts;
    - establishing trust between government and operators by securing risk-related information-sharing;
    - building partnerships to agree on a common vision and achievable resilience objectives;
    - defining the policy mix to prioritise cost-effective resilience measures across the life-cycle;
    - ensuring accountability and monitoring implementation of critical infrastructure resilience policies; and
    - addressing the transboundary dimension of infrastructure systems.

2 For more: https://www.oecd-ilibrary.org/sites/02f0e5a0-en/1/2/5/index.html?itemId=/content/publication/02f0e5a0-en&_csp_=eb11192b2c569d5c3d1424677826106a&itemIGO=oecd&itemContentType=book

19. Acknowledging that some elements of these are already underway, this guidance points toward some useful initial actions which could inform more detailed policy development into 2024:

    - establishing more formalised governance, accountability, and information-sharing arrangements across critical infrastructures (perhaps building on the existing New Zealand Lifelines Council or similar);
    - comprehensive mapping of critical infrastructure assets, networks, hazards, and threats in order to build a system-level view of their interdependencies, strategic importance, and gaps/opportunities for further action;
    - establishing a shared vision/strategic direction and policy outcomes for critical infrastructure resilience; and
    - specifying in more detail the range of options to address shortcomings in the current approach (at both the sector and system level).

***Fuel diversity provides additional resilience in the energy system, and could continue to do so as we increasingly electrify other sectors***

20. The energy system currently enjoys resilience benefits from its diversity of fuels and vectors. It comprises of electricity, gas, and liquid fuel supply chains, each with a range of options across production, import, storage, transmission, distribution, and use. These layers of redundancy mean that while shocks might disrupt parts of the supply chains for a specific fuel(s), others can at least partially fill the gap while service is restored. This is at the core of resilience – no asset is immune to hazards and threats, but a system with the flexibility to deliver the same service in different ways is much better equipped to support a speedy recovery.

21. Cyclone Gabrielle illustrates the point well. Above-ground electricity infrastructure, including the distribution networks and the Redclyffe substation in Napier, was battered by the weather event. But the underground reticulated gas network remained functional, and bottled gas and diesel-fuelled generators helped to further close the 'energy gap'. This meant that heat for comfort and cooking was still supplied, albeit in a limited capacity, while electricity services were restored (it should be noted with pride that, given the circumstances, the sector achieved this restoration at pace).

22. As New Zealand increasingly electrifies its industrial and transport sectors, our dependence on the electricity network will grow, and the interdependencies between the energy and other infrastructures will deepen. We are well placed to manage this – we already have very robust regulatory, commercial, and operational measures in place across the sector to ensure the system continues to provide a reliable security of supply. As the electricity market grows to meet significantly growing demand it will no doubt explore additional opportunities such as distributed energy resources (storage and generation); deep grid-scale

storage; and smart, demand-responsive grid technology.[3] All of these will further enhance the electricity system's resilience to shocks.

23. However, this does raise the question as to how the low-emissions transition changes our energy infrastructure risk profile – particularly if this transition is disorderly and drives out alternative energy vectors or infrastructures that could otherwise be called on as (at least partial) back-up. Both gas and liquid refined fuels offer alternatives to electricity which can be stored and transported with relative speed and ease. Both also have potential low-emissions alternatives, including biomethane, hydrogen, and low-carbon fuels created with carbon capture and utilisation. The strategic value of these opportunities is not only in their emissions reduction potential, but their potential extension of the resilience benefit we already enjoy from having multiple energy vectors at our disposal.

## Conclusion

24. We appreciate the opportunity to provide some brief input at this early stage in the policy process. We will continue to engage as this process develops to explore the best balance of proportionate and targeted measures to enhance New Zealand's critical infrastructure resilience. Should DPMC wish to discuss this submission or these general issues in further detail, do not hesitate to contact us.

3 For more, see BCG's The Future is Electric: https://web-assets.bcg.com/b3/79/19665b7f40c8ba52d5b372cf7e6c/the-future-is-electric-full-report-october-2022.pdf