Vector Limited
110 Carlton Gore Road
PO Box 99882
Newmarket
Auckland 1149
+64 9 978 7788 / vector.co.nz

6 August 2025

Draft National Infrastructure Plan

1. Vector Limited ("**Vector**") is New Zealand's largest distributor of electricity, supplying more than 630,000 electricity connections between Papakura and Wellsford.
2. Vector also operates a gas distribution network that distributes natural gas across the greater Auckland area to over 120,000 customers via 7000 km of pipes.
3. We welcome the opportunity to submit on the NZ Infrastructure Commission - Te Waihanga's draft National Infrastructure Plan ("**the draft Plan**").
4. We note from the draft Plan Te Waihanga's view that:

    - Electricity is critical to the operation of all types of infrastructure, with affordable and reliable electricity a requirement for meeting our economic and environmental goals.
    - Electricity infrastructure demand is expected to increase due to technological changes and the need to decarbonise our economy. Vector's electricity network is undergoing a considerable transformation to enable the electrification of transport and industry.

5. Vector's Symphony strategy is about delivering a more efficient network that is reliable, safe and ready for the future, recognising the challenge of affordability. We are committed to creating energy infrastructure equipped to manage the complex demands of the future, and that provides choices for customers. By thinking outside traditional solutions, leveraging innovative technology solutions and global partnerships, we're developing not just the understanding, but also the tools we will need to navigate the future.
6. We support policy stability, so the energy system has predictable settings that support affordability, security of supply, and the decarbonisation of our economy.
7. We agree that a key area for improvement is the resource management system, which has significant impacts on how we can build, maintain and operate all types of infrastructure. We have submitted on proposed Government changes in this area, most recently to on the national direction packages.
8. We particularly encourage a focus on collaboration and partnering with others, and the adoption of technology solutions and AI in advancing New Zealand's infrastructure.
9. If officials have any questions about this submission, please contact Vector's GM Public Policy & Government Relations Aimee Gulliver in the first instance.

Yours sincerely

[redacted]

[redacted]
Group Manager Public Policy and Government Relations

Bipartisan energy strategy

1. A cohesive bipartisan energy strategy is one of the most meaningful things Government could deliver to support the country's electrification transition.
2. New Zealand's energy system currently lacks overall stewardship, with no single entity responsible or accountable for what is a critical system for both the economy and the lives of everyday New Zealanders.
3. While Vector and other energy companies are developing and deploying smart-grid technologies including demand response (discussed below), lack of central Government direction on a unified approach to balance the sustainability, security of supply and affordability elements of the energy trilemma means avoidable network will be built and paid for by consumers.
4. Industry needs confidence that peaks can be managed, and the lights kept on, as demands for electricity increase. Bipartisan support for a long-term energy strategy would give policy stability and certainty to industry players.

Smarter thinking, smarter systems

5. We agree with Te Waihanga that New Zealand needs to get smarter about how we do infrastructure.
6. Vector has long advocated for the benefits of a smart electricity system for consumers. For example, charging electric vehicles overnight instead of at peak could nearly halve the amount of infrastructure needed to be deployed, and would have a notable impact on our customers' electricity costs. Failing to do so would mean Vector would have to create and invest in a large peak on our network, the costs of which would flow on to all consumers.
7. We believe New Zealand is not focused enough on thinking about technology for climate adaptation, resilience and infrastructure planning. There are very material differences in choices now between physical assets (for example, investing in batteries and solar) versus digital assets which allow us to get much more out of our existing assets and run them in a much smarter way.
8. From an investment perspective we have to make decisions in a smarter way than the traditional approach and regulatory settings have allowed. The complexity is now becoming that digital platforms are needed to be able to coordinate, manage and utilise our existing infrastructure in a much smarter way.
9. Our view is that as a country we focus too much on building physical assets, without the core understanding that to have those assets in the system, digital infrastructure, data and analytics are needed to manage them.

Global partnerships

10. Vector believes strongly in collaborating with organisations or companies overseas – we do not have to invent the wheel in New Zealand, and we think the mindset of doing so holds us back.
11. Vector has a global partnership with Amazon where we are building data analytical platforms using bespoke services, co-developed between Vector Technology Solutions and AWS.

12. We have also worked closely with Florida Power and Light on how they manage their electricity assets given the frequency of hurricanes they experience. We also work with entities in San Diego and Australia about how they manage their fire risk.
13. In New Zealand, we also work closely with NIWA and Fire and Emergency to share information as well as make the most of the capabilities in those entities and their tools and analytics to make smarter decisions.
14. We have another partnership with Google X's Tapestry moonshot – GridPlanning – an AI tool that aims to transform our forward planning by enabling much faster scenario testing for future impacts such as EV uptake, rooftop solar and data centre growth. These network modelling packages can tell us how the electricity and energy system can operate under various conditions, and deploying these tools to improve network flexibility will lead to better outcomes for customers.

GridAware

15. Vector and X have a shared understanding that the whole energy sector has to transform to deliver the critical infrastructure needed for decarbonisation, resilience and affordability. Collaborating with leaders outside the energy sector is a key part of Vector's strategy, and something we think others, including Government, should adopt.
16. One such strategic partnership innovating for better customer outcomes is GridAware, a new AI tool that is reinventing the way we inspect and maintain our electricity network.
17. GridAware is enabling the use of new technology like drones and AI in our network maintenance programme. It is building up a huge repository of images of our assets over time, so we can record their condition and track how they have changed. We are also using machine learning to help target and prioritise maintenance through automatically detecting and flagging issues that we need to investigate.
18. For the broader industry, it provides an opportunity to collaborate by sharing data to train the platform faster by labelling as many images as quickly as possibly for defects and non-defective examples.

Pricing

19. We note the draft Plan's recommendation to take a more consistent approach to the way New Zealanders pay for network infrastructure by making sure charges to users and those who benefit cover the costs.
20. This call for clear, cost-reflective user pricing principles aligns with Vector's pricing roadmap and supports incentives for peak demand management and efficient uptake of distributed energy resources.
21. Vector supports a "user pays" model for infrastructure, and since 2021 we have moved to recover 100 per cent of connection costs from the developer. This ensures that the costs associated with any new or enhanced connections are carried by those directly benefiting from them, rather than being subsidised by the broader customer base
22. We believe growth should pay for growth, and we do not think existing customers should pay for growth when they are not causing it.

23. We support Te Waihanga's position that network infrastructure should fund itself by charging people who use the infrastructure or directly benefit from it.

Data Centres

24. Data centres illustrate well the infrastructure challenge that electricity networks face, and that will increase in coming years.
25. Auckland is experiencing rising demand for data centre connections, each with significant energy requirements.
26. These complex projects offer major opportunities for the region, and for New Zealand more broadly.
27. But they are accompanied by uncertainty about the rate at which electricity demand will grow to meet the capacity requested, since this depends on adoption of data centre services by the data centre's clients.
28. We know these data centre requests will drive a need for us to invest in system growth, but we must ensure our investment is moving in step with demand.
29. Due to the scale of some of these projects, their impacts may not be confined just to our distribution network, and may also impact electricity generation and transmission. Careful and co-ordinated planning is critical.
30. We encourage Government to consider following Ireland's approach and requiring new data centre development in New Zealand to provide dispatchable generation/storage equal to 100 per cent of its requested demand.

Gas

31. There is no regulatory framework to manage degrowth of assets, with the Commerce Commission still regulating the gas network as if there will be further growth when gas consumption in Auckland has been steadily declining since 2019.
32. We recommend Government implements a change to Part 4 of the Commerce Act 1986 to preserve the principle of financial capital maintenance that supports infrastructure investment in New Zealand.
33. Regulatory failure leading to asset stranding of gas pipeline infrastructure will radically undermine the principles of financial capital maintenance.
34. This would then put at risk electricity distribution businesses' ability to access debt and equity - a serious concern when such large and substantial energy infrastructure investments are required to drive electrification.
35. Further, future investments in gas network infrastructure such as repair after a natural disaster will be complicated. The risk of capital recovery combined with the duties of directors under the Companies Act 1993 may mean it is more economically rational to shut down the impacted network (in part or in full) prematurely rather than deploy capital for repair. This would leave consumers stranded on the network.

Resilience

36. We note Te Waihanga's remarks that we need to continue investing to ensure our infrastructure is fit for the future. We agree that climate change is creating the need to lift the

resilience of our infrastructure and transform it to reduce carbon emissions. We agree that we must continue maintaining and renewing the infrastructure we already have an ensure it is resilient against natural hazards.

37. We have recently undertaken a piece of work on the trade-offs between investment and resilience outcomes and have consulted with our customers on their preferences. In due course we want to work with Government and regulators to propose a framework for infrastructure resilience investment.
38. We also recommend the Commerce Act is amended so that the Commerce Commission is directed to take climate change and resilience into account.