



TRANSPOWER

A future grid blueprint for Aotearoa

Consultation 3:
Future Direction –
Our Energy Scenarios
Summary of submissions

July 2026

Te Kanapu
Future Grid Blueprint

Executive summary

As owner and operator of the national grid and electricity system, Transpower has an important role to play in enabling Aotearoa New Zealand to electrify and grow. Through our Te Kanapu initiative, we are building a grid blueprint for New Zealand in 2050 and beyond, to guide investments in the grid that support the country's future economic growth and net-zero aspirations.

The blueprint will contain future scenarios and the low regrets investment options for the 2030s; options that address the features common across our five future energy scenarios, identify the lowest overall system cost and will deliver an optimal future grid for everyone.

The approach we are taking is collaborative: we are developing this blueprint by gathering views and information from many others. Since the start of 2025, we've been meeting with communities, businesses, iwi, customers, industry and energy sector groups, and government to hear their thoughts on Aotearoa in 2050 and what it means for our business.

We have also sought feedback through a series of structured consultations. In early March 2026, we published our third consultation **Consultation 3: Future Direction – Our Energy Scenarios**. It outlined the five revised scenarios developed to enable a discussion around New Zealand's different possible futures and resulting energy use.

These scenarios provide the critical foundation on which the Grid Blueprint will be built. They were revised following the feedback received in **Consultation 2: Potential Scenarios**, including themes we have been hearing in our conversations with stakeholders.

For this consultation, we kept our questions to a minimum. We asked:

1. Regarding our scenarios, do you have any further observations you wish to raise?
2. Regarding our assumptions, do you have any observations or feedback you wish to raise?
3. What sort of information would you like to receive from us over the coming months as we develop our blueprint, and how would you like to receive that information?

We received 54 responses of which 35 contained enough information to be considered valid - 12% of submissions were from individuals, 88% from industry.

The feedback we received is outlined in this summary of submissions.

Submissions were received from

Aurora Energy

BusinessNZ Energy Council

Christchurch International Airport

Energy Resources Aotearoa

Fonterra

Genesis

IEGA

Major Electricity Users' Group

Mercury

NZ Offshore Wind Ltd

Powerco

Unison Networks Limited.

Vector

Wellington Electricity

Feedback on Consultation 3

In this consultation, we asked broad, open-ended questions. Unsurprisingly, respondents canvassed a broad range of issues in their feedback, not all of which are captured here. Some of the feedback provided helpful insights into what we need to include in our blueprint.

There are, however, some fundamental themes that continue to emerge in most of our conversations and many of the submissions we have received in all our consultations, not just this one.

Growth, climate ambition and the role of fossil fuels

Feedback on New Zealand's climate ambition and the future role for fossil fuels in our energy system reflect genuinely opposed world views. While our scenarios are helping to surface the trade-offs at play, this work does not aim to reconcile fundamentally different values across stakeholders but rather, plan for a range of possible futures.

This future focus means we are managing much uncertainty. However, Te Kanapu is grounded in two key assumptions which provide some boundaries for our work. Those assumptions are that in 2050, New Zealand,

1. has a growing and thriving economy, and
2. remains committed to achieving net-zero carbon emissions.

This approach enables us to test the upper limits of what could eventuate and plan for this. It is easier for us to slow down or delay investment than it is to speed up because we underestimated the need. As such, our scenarios paint the picture of growth, electrification and declining use of fossil fuels.

It's all about cost and reliability

A second core theme is that cost and reliability concerns are top of mind for all submitters whether they are industry representatives or consumers. While responses differ in technical depth, both consistently raise affordability, system security and trust as core concerns.

These are issues that we take very seriously. The primary objective of our Te Kanapu work programme is to identify the lowest-cost electricity pathway to growth in a secure and sustainable system.

If investment is required, it must be responsible and delivered in a timely manner, only where there are clear benefits to everyone in New Zealand. In the

long-term, we expect new build or grid enhancement to have a positive effect on affordability when compared to the option of not doing anything.

The Grid Blueprint will provide only high-level estimates of the investments identified. Detailed cost models will be completed only when any actual project is submitted through the regulated investment test process.

Specifically, feedback has shown that people want to see more explicit consumer cost modelling under each scenario. Unfortunately, that is not something we are able to provide and is beyond the scope of Te Kanapu.

Keep going

Finally, respondents have continued to endorse our approach to engagement and are broadly comfortable that our scenarios are feasible and plausible for use in our modelling. However there remains some concern that our assumptions are too optimistic, with calls for assumptions to be more explicitly anchored to observable real-world conditions. This is unsurprising given that responses to Consultation 3 came during a period geopolitical conflict.

With our two key assumptions in play, Te Kanapu is deliberately framed on an assumption of future growth. It is growth that impacts the decisions we need to make around investment in the national grid. We need to identify the upper limit of electrification and the broadest possible changes in the system, as ultimately, it is easier for us to scale back or delay action, than it is to scale up planning and investment at short notice.

Uncertainty is also a key reason for why we use a range of scenarios, not a single pathway. Given the uncertainty of the future, we seek to identify the commonalities between multiple possibilities when it comes to identifying the least-regrets investments.

Real-world conditions will be a factor in the sensitivity testing we apply to the investment options presented by our modelling, and we will share this information with you as we work toward publishing our Grid Blueprint.

However, our first blueprint will not be our last. We plan to revisit our scenarios and our least-regrets investments regularly as our energy system evolves, and we recognise that over time, some things will become more certain, some less certain and that new uncertainties will emerge.

Summary of feedback themes

The following table provides a broad summary of the feedback we received and how we are responding to that feedback.

Key themes of feedback	Our response
<p>Affordability is critical</p> <p>This comes through loudly from industry and consumers alike.</p> <p>Electricity costs already feel tight; short-term impacts matter as much as the long-term ambition.</p>	<p>Affordability is central to our thinking for how we can deliver the Grid Blueprint as a series of lowest cost, least regrets investments.</p> <p>Since this consultation was issued, we have also published an insights paper, <u>Fuelling growth by enabling a diverse mix of generation</u>, where we start to explore the cost, reliability and emissions variations across six different generation and storage mixes, used to meet future demand.</p> <p>This paper is a key part of our understanding of how the lowest cost electricity pathway to growth could be realised.</p>
<p>System security is non-negotiable</p> <p>Firming capacity and transmission sequencing need to be explicit, especially in 2026-2035.</p>	<p>We agree and this is baked into our methodology.</p> <p>Near-term work to ensure security of supply sits with Transpower as the System Operator who the annual Security of Supply Assessment that spans the coming 10-years. The final <u>2026 Security of Supply Assessment</u> was published in June 2026 addressing the 2026-2035 timelines.</p>
<p>Gas and LNG pricing assumptions are too low</p> <p>A view that gas is being underrepresented and that pricing assumptions are too low.</p> <p>Specific requests to model LNG across all scenarios, update gas pricing to reflect actual market conditions.</p>	<p>We have modelled a range of different outputs that can be explored in more detail in our data book here, including the higher and lower values across the different sensitivities applied.</p> <p>LNG has been modelled in four of the five scenarios. At this stage we do not intend on changing our assumptions on gas or LNG.</p>
<p>Revised scenarios now more credible</p> <p>While respondents broadly agree our scenarios are a plausible and credible set of potential futures, they also want more detail on what would need to be true to realise the growth ambitions. The ambition is welcomed and supported, but policy settings matter.</p> <p>Industry stakeholders remain concerned about the lack of a clear energy strategy for New Zealand.</p>	<p>We are mindful that stakeholders have asked for more detail on what needs to be true for our scenarios to be realised so this is something we will look into.</p> <p>Work is underway now to explore this and we aim to develop a narrative for each scenario that addresses this question, including examples of enabling policies or themes.</p> <p>This work is underway now and will be shared in due course.</p>

Key themes of feedback	Our response
<p>Clearer investment signals are needed</p> <p>Looking for good line of sight on when, where and how transmission investment will happen so those looking to invest can plan with confidence.</p>	<p>This is an objective we expect our Grid Blueprint to address by identifying a list of least-regrets transmission investments that we can begin to action in preparation for 2050.</p> <p>By providing early investment signals to industry we can avoid planning in silos.</p> <p>In the near-term, Transpower’s RCP 4 workplan and programme of major capital projects are available on our website.</p>
<p>Keep doing what you are doing</p> <p>There has been positive feedback about our transparency and iterative engagement to date, with requests that we continue.</p>	<p>Our plan is to continue our approach to date sharing our information as widely as we can, in accessible formats for all interested parties.</p> <p>We will be expanding our engagement programme to reach more regions and engage more with consumers.</p> <p>We are planning an ongoing series of webinars and aim to publish more insights and backgrounders to share more of our detail and thinking.</p>



What happens next?

To progress our technical analysis and to develop our Grid Blueprint, we are not making any further changes to our scenarios. However, as our modelling generates different outputs, we will apply real-world sensitivity testing across these prior to the publication of a draft.

In practice, this means keeping a close eye on significant changes that occur in the operating environment and continually evaluating whether they will have a material impact on the future from 2050 and beyond.

Uncertainty is a key reason for why we use a range of scenarios, not a single pathway. Given the uncertainty of the future, we seek to identify the commonalities between multiple possibilities when it comes to identifying the least-regrets investments.

If material change did occur, it would likely shift an entire scenario, or multiple scenarios, rather than individual aspects of a single scenario. As such, the impact of sensitivities would not necessarily result in the need to reconstruct a scenario, rather it would shift an entire scenario in one direction or another.

As we continue with our modelling and in response to your feedback, we will be doing more of the following:

1. Publishing more insights and more of the data that sits behind our work. Recent publications include [Aviation fuel insights](#); [Data centres insights](#), and our comprehensive paper *Fuelling growth by enabling a diverse mix of generation*. Stakeholders have requested additional insights on consumer and distributed energy resources and the role of flexibility; these are on our list for delivery.

2. What's needed to realise the scenarios? We have work underway to identify what needs to be true across the scenarios, to enable the growth ambition outlined.
3. Expanding our engagement with stakeholders in the key growth regions, that have been identified through this process, and with consumers. This will include focussed sessions to better understand regional goals and growth aspirations, how these will be realised and what that means for electricity demand.

Completing and publishing the draft Grid Blueprint

We anticipate publishing the draft Grid Blueprint for consultation, early in 2027. We will incorporate the feedback we receive before publishing the first Grid Blueprint, outlining our initial tranche of planned investments in the national electricity grid, needed in the mid-2030s and 2040s, to enable 2050 and beyond.

Our first Grid Blueprint will not be our last. We will continue to review and revise this work as we gather feedback and will update the blueprint every few years to ensure it remains current.

If you have any feedback we welcome you getting in touch by emailing feedback@transpower.co.nz.

You can also sign up to receive email updates on Te Kanapu as our work progresses. As we move into the technical analysis, we will publish regular updates to outline any changes we make to key inputs or our assumptions around demand, generation and options.

www.transpower.co.nz/our-work/te-kanapu



Key topics of feedback

1. Scenario design and realism

Broadly speaking, feedback has shown that our scenarios are viewed as a set of plausible and realistic futures on which to base the Grid Blueprint. Respondents acknowledge and welcome the changes made in response to feedback on the draft scenarios and they agree the revised set are more realistic than the previous. However, concern remains that our assumptions are still too optimistic. There is call for greater sensitivity testing and for assumptions to be more explicitly anchored to observable real-world conditions.

2. Engagement approach

Respondents provided positive feedback on our approach to date and ask that we continue to engage openly and often. While email remains the preferred channel for receiving updates, respondents value our webinars and the opportunities to meet face-to-face.

The transparency of the process is highly valued with respondents also wanting to see more detail on assumptions, sensitivities and trade-offs, and investment signals as early as possible. Cross-sector coordination remains critical to success.

3. Cost and affordability

The most consistently present theme across all respondent groups, be they business or consumers, is around the cost and affordability of electricity. There is a clear and consistent call for affordability to be treated as a core planning consideration, and a desire to see more explicit consumer cost modelling under each scenario.

4. Geopolitical risk

Recent international conflict was cited by some as a material and immediate risk requiring updated modelling assumptions. The broader concern is that ongoing global instability should be reflected in baseline assumptions rather than being treated solely as a low-probability worst-case scenario.

5. Climate obligations and decarbonisation

This remains the most polarised theme across all groups. Some argue that we have an obligation to align scenarios with the Paris Agreement and the Climate Change Response Act, and that current scenarios fall short of this; others argue that net-zero targets are unrealistic and that the scenarios should reflect growing global scepticism about the pace of climate action.

6. National energy strategy and policy alignment

Some submitters have questioned 'what needs to be true' for these futures to be realised, pointing to the need for a coherent national energy strategy as a fundamental gap. Some submitters ask that we are more explicit on how scenarios would shift under different policy directions.

This is consistent with what we heard in our earlier consultation where stakeholders emphasised that strong government leadership is essential to enable high-growth future scenarios and affordable, reliable, and future-ready electricity infrastructure. This includes setting national strategy, ensuring investment certainty, aligning pricing and market rules, and coordinating across agencies to support the energy transition.

7. Role of gas and LNG in firming capacity and security of supply

Some submitters tell us that gas remains underrepresented in our scenarios both as a transitional fuel, but also a strategic economic asset. They argue that with thermal retirements continuing, and replacement capacity deemed to be years away, that this issue is not sufficiently considered.

Concern is expressed about the adequacy of firming capacity during the critical 2026-2030 window. Submitters broadly agree that dispatchable firming capacity is non-negotiable, and that the sequencing of capacity retirement against replacement technologies requires more explicit and urgent modelling.

8. Evolving the generation mix

Some submitters argue the renewable build is already outpacing some scenario assumptions and that offshore wind energy should feature across more scenarios. Submitters also express concern that the role of distributed energy and consumer energy resources has been underestimated.

9. Grid investment timing and regional demand

Submitters are keen to understand our investment intentions more clearly and for Transpower to move from broad scenario planning to clear, specific investment signals. This includes where investment is needed, when, and how costs will be shared to allow the broader industry to plan with confidence. There is strong interest in the regional implications of growth.



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