Title: **Testing our thinking - Developing an enduring National Infrastructure Plan**

Organisation: **Transpower New Zealand Limited**

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Summary of information submitted

Page 1 - Introduction

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We're seeking feedback

Our Discussion Document, Testing our thinking: Developing an enduring National Infrastructure Plan, sets out our thinking as we begin work to develop a National Infrastructure Plan. The Discussion Document sets out what we expect the Plan will cover and the problem it's trying to solve, as well as the approach we're proposing to take to develop it.

We're sharing this now to test our thinking and give you the chance to share your thoughts. Let us know if we've got it right or if there are issues you think we've missed.

We'll use your feedback as we develop the Plan. We'll be sharing our thinking by presenting at events around the country, hosting workshops and webinars, and sharing updates through our website, newsletter, and social media. We'll also seek feedback on a draft Plan before publishing the final Plan in December 2025.

Submission overview

You'll find 17 main questions that cover the topics found in the Discussion Document. You can answer as many questions as you like and can provide links to material within your responses. On the final page (6. Next steps) you can provide any other comments or suggestions that you would like us to consider as we develop the National Infrastructure Plan. Submissions are welcomed from both individuals and organisations.

A few things to note:

- You can save progress using the button at the top right of this form.
- A red asterisk (*) denotes a mandatory field that must be completed before the form can be submitted.
- We expect organisations to provide a single submission reflecting the views of their organisation. Collaboration within your organisation and internal review of your submission (before final submission), is supported through our Information Supply Platform. You'll need to be registered with an Infrastructure Hub account, and be affiliated with your organisation to utilise these advanced features. Many organisations will already have a '*Principal respondent*' who can manage submissions and assign users at your organisation with access to the draft responses.
- Submissions will be published on our website after the closing date. The names and details of organisations that submit will be published, but all personal and any commercial sensitive information will be removed.

Further assistance

Each submission that is started is provided a unique reference identifier. These identifiers are shown in the top right of each application page. Use this identifier when seeking further assistance or communicating with us about this submission by using one of the following methods.

- Use info@tewaihanga.govt.nz to contact us with any questions relating to our Discussion Document and consultation.
- Use inform@tewaihanga.govt.nz for help managing roles and permissions of user accounts affiliated with your organisation in the Information Supply Platform (ISP).

Submission method

Our preferred method is to receive responses through this form. However, we anticipate some submitters will wish to upload a pdf document, especially where their submission is complex or long. If this submission method is necessary, please use this word template and save as a pdf. We ask that you retain the structure and headings provided in the template as this will support our processing of responses.

Select a submission method

To continue, select the method you will be using.

Online form

Page 2 - Context for the Plan

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Testing our thinking

The Discussion Document includes five sections. Below we're seeking feedback on why we need a National Infrastructure Plan. We also want to test our thinking on our long-term needs and make sure we have a clear view of what investment is already planned.

Section one: Why we need a National Infrastructure Plan

A National Infrastructure Plan can provide information that can help improve certainty, while retaining enough flexibility to cancel or amend projects as circumstances or priorities change.

1. What are the most critical infrastructure challenges that the National Infrastructure Plan needs to address over the next 30 years?

The discussion document identifies the challenges well; challenges relate to climate change effects driving resilience expenditure; renewal expenditure; understanding demand through demographics and GDP; access to capital and borrowing costs; consenting process and costs ; and finding and funding personnel with planning capabilities and a workforce with delivery expertise.

Other challenges are:

Challenge from opposition to infrastructure projects by local communities or environmental protection groups. Infrastructure that has a functional, technical or locational need to be in a place, or at a scale or form, cannot always avoid sensitive environments. [Looking ahead over the next 30 years, the National Grid needs to upgrade and expand to meet demand and aspirations for a rapid electrification transition - regulatory settings will need to be more enabling in future to support delivery of this infrastructure. Inherent in this will be achieving the appropriate balance of national and community interests in deciding where, how and when infrastructure works are carried out.

Challenge from poor project scoping with lack of clarity on project needs and objectives creates consequential delays and additional costs for example, due to variations.

For Transpower, our proposal for expenditure over the five years 2025 – 2030 will allow us to replace, refurbish, and maintain assets critical to delivering electricity service levels expected now and in the future. Refer to our expenditure proposal submitted December 2023 RCP4 Main Proposal, and the Commerce Commission's final decision on that proposed expenditure RCP4-Final-Decision-paper-29-August-2024.pdf

2. How can te ao Māori perspectives and principles be used to strengthen the National Infrastructure Plan's approach to long-term infrastructure planning?

Many existing and proposed infrastructure assets are on or near land owned by or significant to Māori. Iwi and hapū play an important role that in caring for and protecting these areas as kaitiaki in accordance with tikanga Māori. The National Grid will be an enduring part of the whenua. Transpower believes that improved sustainability of its network operations can only be delivered in partnership with the community. Specifically,

we acknowledge mana whenua connection with the land and seek to partner with them (supported by our Māori partnership strategy) to remediate the natural environment and minimise the impact of our work on sites of cultural significance. We expect to work with communities over time and greatly value these relationships.

Section two: Our long-term needs

The National Infrastructure Plan will reflect on what New Zealanders value and expect from infrastructure. To do this, the Plan needs to consider New Zealanders' long-term aspirations and how these could be impacted over the next 30 years.

3. What are the main sources of uncertainty in infrastructure planning, and how could they be addressed when considering new capital investments?
Demand (demographic, economic) projections; the effect of climate change and natural disasters on those projections; supply chains (including capable workforce). Short political and funding cycles, and risk of political rather than economic decision-making at local government level.

Scenarios of demand help test need for, and timing of, investments , where those investments include capital investment, or create processes that can be used to mitigate or mange demand. For grid investment greater than $30m, Transpower must use forecast Electricity Demand and Generation Scenarios (EDGS) (or variants), produced by MBIE, along with Cost Benefit Analysis that has a decision rule to choose the option that maximises net benefits to consumers.

The discussion document also raises the role that pricing can have in mitigating or managing demand on networks e.g. for road networks, congestion charging and road tolls. Transpower's investment framework obliges consideration of non-transmission solutions (i.e. paying for third party service) to manage demand growth and demand timing.

Some key issues affected certainty are:

Lack of understanding of key drivers;

short political and funding cycle,; politically driven decision making at LG level.

Too much focus on population projections that are easily changed due to major events e.g. CHCH EQ significantly impacted on growth projections but the focus on what and where infrastructure should go did not.

Agree that the regulatory framework for funding needs to change particularly for road infrastructure.

Section three: What investment is already planned

We already gather and share data on current or planned infrastructure projects through the National Infrastructure Pipeline. This data, alongside other information gathered by the Treasury or published by infrastructure providers, helps to paint a picture of investment intentions.

4. How can the National Infrastructure Pipeline be used to better support infrastructure planning and delivery across New Zealand?

The letter to Ministers letter-from-hon-chris-bishop-to-ministers.pdf states "The Pipeline already contains information from contributing entities on current or planned infrastructure projects, but the Commission will build on this as part of the Plan to create a more complete picture that gives greater insight into project timeframes, spend, and workforce projections. To do this, the Pipeline will need to include information from all government entities with infrastructure responsibilities".

Visibility of system wide intentions is good but its upkeep and accuracy will rely on good, reliable, and up-to-date information. Transpower supports the role for the National Infrastructure Pipeline as a planning tool. Every year Transpower publishes its Transmission Planning Report to signal investment needs and potential options Transmission Planning Report 2023 and has created a visual tool of the planning report TPR Envision | Envision.

Transpower works with councils to ensure our infrastructure is noted in community plans and we communicate our major programmes of work regularly. On specific capital investment we develop regional strategies in partnership with EDBs and councils to consider technical and planning solutions for new transmission assets and major upgrade programmes.

The Electricity Authority has consulted with the electricity industry on the nature of the information that Transpower should provide to the Authority, for a similar "pipeline" view of new generation connections, refer TP Sub Information provision investment pipeline.

Transpower's connections pipeline provides an aggregated view of our forward pipeline of works by count and size (MW) noting connection types and subtypes, their locations (by planning region), need dates (by Regulatory Control Period) and enquiry stages, available here: Connection enquiry information | Transpower

Section four: Changing the approach

We have used our research and publicly available information on infrastructure investment challenges to identify key areas for change. The next question and the following three pages seek further detail on the three themes in section four of our paper. Within each of the three themes, we explore some topics in more detail, outlining the evidence, discussing the current 'state of play', and asking questions about where more work is needed.

5. Are we focusing on the right problems, and are there others we should consider?

Yes . For Transpower, looking ahead over the next 30 years, the National Grid needs to upgrade and expand to meet demand and aspirations for a rapid electrification transition. Inherent in this will be achieving the appropriate balance of national and community interests in deciding where, how and when infrastructure works are carried out.

In our view regulatory settings across economic and environmental perspectives need to enhance efficient processes by removing the risk of duplication, such as relitigating options when considered under the Commerce Act and the Resource Management Act; and a greater use of more flexible and adaptive codes of practice rather than prescriptive rules.

Page 3 - Capability to plan and build

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Changing the approach — Capability to plan and build

Section four looks at changes that we can make to our infrastructure system to get us better results. We've broken these changes down into three themes: capability to plan and build, taking care of what we have, and getting the settings right.

For the first theme, we look at three key areas:

- Investment management: Stability, consistency, and future focus
- Workforce and project leadership: Building capability is essential
- Project costs: Escalation means less infrastructure services.

Investment management: Stability, consistency, and future focus

We're interested in your views on how we can address the challenges with government infrastructure planning and decision-making.

6. What changes would enable better infrastructure investment decisions by central and local government?

In our previous submission we noted that there are internationally recognised programmes such as PMI or PRINCE2 which offer well established major project leadership frameworks. We would encourage the use of these internationally recognised frameworks to build New Zealand's major project leadership capability. Infrastructure Commission - Infrastructure for a Better Future - Transpower Response.pdf

7. How should we think about balancing competing investment needs when there is not enough money to build everything?

For competing needs across investment of the same type – e.g. roads in different locations: making use of consistent analytical (e.g. quantitative/qualitative CBA) and evaluation (qualitative criteria) frameworks.

Transpower's larger capital expenditure investments [PP1] [MC2] [MC3] (> $30m) are subject to a regulated "investment test." The test requires options analysis and consistent application of a quantitative cost-benefit analytical framework with an options decision rule to maximise net benefits. The options analysis also requires consideration of non-transmission solutions that are operating expenditures to purchase services from third parties that could avoid or defer the need for the capital expenditure. [RH4] [MC5]

Refer Transpower's investment test Schedule D, major capex proposals Schedule G, and consultation requirements Schedule I Transpower-Capital-Expenditure-Input-Methodology-Determination-consolidated-as-of-29-January-2020.pdf.

Workforce and project leadership: Building capability is essential

We're interested in your views on how we can build capability in the infrastructure workforce.

8. How can we improve leadership in public infrastructure projects to make sure they're well planned and delivered? What's stopping us from doing this?

Transpower supports intentions for (as per discussion document):

- *Treasury reviewing government agencies' business case practices*

Te Waihanga /the Commission creating a Project Leadership Capability framework and leadership network to support infrastructure leaders to connect and learn from each other[

9. How can we build a more capable and diverse infrastructure workforce that draws on all of New Zealand's talent?

Transpower is monitoring long-term resource needs to ensure that the right resources, processes, and tools are available to efficiently deliver its work. For more information, refer Chapter 6 RCP4 Main Proposal

We strongly support the following observations in the discussion document (page 53):

- *sectors that are regulated under the Commerce Act are more effective and active in regulating their asset management*
- *sectors with governance bodies that know how important the infrastructure is for the service they provide, are likely to do better at looking after it*
- *there is a need within central and local government to lift understanding of the importance and practice of asset management. This includes resourcing it properly and having people with the right capabilities for this work*
- *maintaining infrastructure is not something that is done once and move on – it is an ongoing job that requires ongoing funding, resourcing, and commitment by infrastructure owners.[RH1]*

Further, we'd add that it takes time to build, train and cement a reliable workforce

Project costs: Escalation means less infrastructure services

We're interested in your views on further opportunities to improve our ability to deliver good infrastructure at an affordable cost.

10. What approaches could be used to get better value from our infrastructure dollar? What's stopping us from doing this?
Clarity on investment need and project objectives, with good processes and planning for making decisions about project scope and design. This understanding needs investment in the right people with capability for planning, procuring, and managing infrastructure.

Long-term maintenance of existing assets needs to use risk-based analysis to optimise time-based maintenance actions. Intervention and timing are determined based on factors such as condition, performance and criticality of the asset.

We support Business NZ submission view "what is needed is a clear statement of strategic priorities for different components of infrastructure, including realistic timeframes for work, and identification of funding and financing sources."

Page 4 - Taking care of what we've got

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Changing the approach — Taking care of what we've got

The second theme in section four looks at how we can get better at taking care of what we have. It looks at three areas:

- Asset management: Managing what we already have is the biggest task
- Resilience: Preparing for greater disruption
- Decarbonisation: A different kind of challenge.

Asset management: Managing what we already have is the biggest task

Asset management means looking after our infrastructure. We are interested in your views on how we can improve planning for this.

11. What strategies would encourage a better long-term view of asset management and how could asset management planning be improved? What's stopping us from doing this?

Transpower examples: Asset Management | Transpower Transpower's Asset Management Plan 2023

Agree with needing to know your assets, where they are, and what their condition is (stocktake). Run demand scenarios. Keep expenditure records. Transpower's revenue for cost recovery is derived using " building blocks" : return on capital (WACC) , return of capital (depreciation); tax and opex

Climate change is increasing both the frequency and magnitude of natural hazards that already occur, so asset planning needs to account for this changing dynamic by incorporating resilience thinking into the options decision making.

Resilience: Preparing for greater disruption

We are interested in your views on how we can better understand the risks that natural hazards pose for our infrastructure.

12. How can we improve the way we understand and manage risks to infrastructure? What's stopping us from doing this?

Transpower example: Transpower Climate Adaptation Plan – September 2024

Our assessment of climate-related physical risks to the national grid considers a wide range of possible hazards e.g. air temperature rise, flooding, land stability, wind strength and wild fire.

We quantify these risks using the Hazard, Exposure, Vulnerability, Impact (HEVI) methodology (refer page 13). We consider climate-related risks and opportunities over the short, medium, and long- term, for the various climate scenarios.

Decarbonisation: A different kind of challenge

We're interested in your views on how we can improve understanding of the decarbonisation challenge facing infrastructure.

13. How can we lower carbon emissions from providing and using infrastructure? What's stopping us from doing this?

Transpower example: Our Sustainability Strategy | Transpower

We are currently working to include carbon and sustainability considerations into our core decision-making frameworks. This will help ensure that the national electricity grid operates in a way that reduces carbon emissions and supports environmental sustainability.

- *Reduce Scope 1 & 2 GHG emissions, focusing on carbon intensity of operations. This objective covers reducing SF6 gases used as insulation, a transmission losses work programme, and using electric vehicles.*
- *Reduce Scope 3 GHG emissions, focusing on major suppliers activities, e.g. using drones to reduce carbon-intensity of grid maintenance*

Key to an objective to lower emissions is to understand both the direct and indirect sources for emissions. Refer Transpower FY24 Greenhouse Gas Inventory Report FINAL.pdf

Scope 1 (Category 1): Direct GHG emissions, as a result of Transpower operations, including fuel usage and fugitive gases

Scope 2 (Category 2): Indirect GHG emissions from Transpower electricity usage and transmission losses from the national grid;

Scope 3 (Category 3, 4, 6): Indirect GHG emissions from Transpower's supply chain

Page 5 - Getting the settings right

Changing the approach — Getting the settings right

The third theme in section four looks at how we can get our settings right to get better results from our infrastructure system. It looks at three areas:

- Institutions: Setting the rules of the game
- Network pricing: How we price infrastructure services impacts what we think we need
- Regulation: Charting a more enabling path.

Institutions: Setting the rules of the game

We're interested in your views on what changes to our infrastructure institutions would make the biggest difference in giving us the infrastructure we need at an affordable cost.

14. Are any changes needed to our infrastructure institutions and systems and if so, what would make the biggest difference?

We support the work of the Infrastructure Commission.

We support the Commerce Commission having new responsibilities for oversight in water supply, and note the discussion document recognition of its statutory role for enabling investment in electricity and gas networks.

We agree with the vision expressed in the paper "There are some areas where we can foresee the need for change, such as the need to increase the supply of low-emission electricity. Significant investment is needed with PwC estimating that more than $50 billion could be required by 2035. Changes may be needed to ensure this investment can be funded and delivered efficiently"

Transpower is actively researching and evaluating ways to reshape its regulatory regime towards a best practice and standards approach for activities associated with maintaining and upgrading the National Grid. With significant investment forecast our objective is to identify efficiencies by reducing regulatory duplication (such as relitigating options when viewed from economic and environmental perspectives) and removing inflexible prescription by greater use of reference or codes of practice. We welcome the opportunity to continue engaging with government agencies such as MBIE and MfE, and Te Waihanga, on this future grid focus and what the system as a whole needs to deliver.

Network pricing: How we price infrastructure services impacts what we think we need

We're interested in your views on further opportunities to improve network infrastructure pricing.

15. How can best practice network pricing be used to provide better infrastructure outcomes?

"Best practice" network pricing is a big area and could cover several ideological approaches towards the end effect of charges to the consumer and whether those charges should be signalling e.g. peak/off-peak use, or scarcity; or whether they act as cost recovery e.g. user-pay road tolls or being socialised; and whether economic efficiency should be the only pricing criteria. Pricing that signals to customers the costs of their consumption tend to lead to more optimal utilisation, however, it also has distributional impacts that should be considered from an equity standpoint.

Noting that the premise for the charges to Transpower's customers for the national grid is that Transpower's investment costs are allocated according to modelled benefits to each grid user and to geographical regions (based on thinking that when purchasing good or services, consumers pay costs that accord with the benefits they receive from those good or services).

Regulation: Charting a more enabling path

We're interested in your views on further opportunities to improve regulation affecting infrastructure delivery.

16. What regulatory settings need to change to enable better infrastructure outcomes?

The Commerce Commission has been successful in creating conditions for networks investment, driven by statute from Parliament - the Commerce Act 1986 - and the policy setting of levies for funding the regulator, and legal cost recovery mechanisms from consumers / end user i.e. not funded by taxes from the Crown or rates from Councils. We support the Commerce Commission having new responsibilities for oversight in water supply

In our view regulatory settings across economic and environmental perspectives need to remove risk of duplication, such as relitigating options when considered under the Commerce Act and the Resource Management Act; and a greater use of more flexible and adaptive codes of practice rather than prescriptive rules.

Page 6 - What happens next?

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Additional information to support our development of the Plan

Section five in the Discussion Document is on the next steps. In this section, we're asking you for any additional comments, suggestions, or supporting documentation that we should consider in our development of the National Infrastructure Plan.

17. Do you have any additional comments or suggestions that you would like us to consider as we develop the National Infrastructure Plan?

Click 'Add another' to add multiple suggestions or comments.

Item 1

Context, e.g. The National Adaptation Plan (Ministry for the Environment). Transpower's climate adaptation plan *Transpower Climate Adaptation Plan – September 2024*

18. Attach any documents that support your submission

Click 'Add another' to add multiple attachments in PDF format.

Document 1

No attachment

Thank you for your response

Thank you for providing feedback on our Discussion Document. We'll use your comments as we continue to develop the Plan. This will not be the only opportunity for you to provide feedback, but it is an important way to test our emerging thinking on the development of an enduring National Infrastructure Plan.

If you have prepared a submission on behalf of an organisation, you'll need to be an authorised *respondent* to make the final submission. If you entered a new organisation during sign-up, or your organisation does not already have a *Principal respondent* assigned, you will have been asked to nominate yourself or someone else for this role as you started this submission. Our team will have worked to verify these accounts allowing *Principal respondents* to manage access and assignment of requests for information to people within your organisation.

If you require any assistance please reach out to our team at inform@tewaihanga.govt.nz.