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Kia urutau, kia ora: Kia āhuarangi rite a Aotearoa

Adapt and thrive: Building a climate-resilient New Zealand

Draft national adaptation plan

Managed Retreat

Submission to the Ministry for the Environment by Transpower New Zealand Limited

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Introduction

1. Transpower New Zealand Limited (**Transpower**) is the owner and operator of New Zealand's electricity transmission network, the National Grid[1]. The Grid is nationally significant infrastructure, and a lifeline utility under the Civil Defence Emergency Management Act 2002.

2. We are a Climate Reporting Entity under the Climate Change Response Act (Zero Carbon) Amendment Act 2019. We will prepare climate statements in accordance with the climate-related disclosure framework recently issued by the External Reporting Board (**XRB**). We are also a member of the Climate Leaders Coalition.

3. Transpower's role as Grid Owner is to reliably and efficiently transport electricity from where it is generated to some large electricity users and the distribution companies that deliver it to homes and businesses all over the country. As system operator, we operate a competitive electricity market in real time to ensure electricity is flowing to where it is needed, 24 hours a day, 7 days a week.

4. We provide an essential service for the good of all New Zealanders. We have a diverse range of assets, which cross a large variety of environments across the country. How the Grid adapts to climate change and other hazards is front of mind. So too is the scale of the task facing Transpower as we play our part in electrifying the economy and meeting the country's climate change commitments. 60-70 new Grid connections and 10-20 major upgrades to the Grid will be required, on top of our extensive maintenance regime. Any projects required to adapt to climate change will add to the challenge we are facing.

5. It is crucial that the legislative settings enable changes to the Grid in a timely and efficient manner in order to deliver the infrastructure investment required to meet this challenge. These legislative settings are not limited to the proposed Natural and Built Environments Act (**NBA**), Strategic Planning Act (**SPA**), Climate Adaptation Act (**CAA**) and the National Adaptation Plan (**NAP**). For Transpower, they also extend to the Commerce Act, Public Works Act, Marine and Coastal Areas Act, Conservation Act, and Wildlife Act among others.

6. Transpower has an interest in, and welcomes the opportunity to comment on, the consultations for the early policy development of the CAA and the Draft NAP. Transpower would also welcome the opportunity to work with officials on the complex issues relating to managed retreat and adaptation more generally – including on development of the NAP, plans within it, and continued policy development of the CAA.

[1] To operate the Grid, we own and operate an extensive nationwide telecommunications network.

Context

7. Transpower has advanced asset management practices. These practices address a range of issues and risks, including those resulting from or exacerbated by climate change, such as:

    - Coastal inundation;
    - Increased frequency of high impact (flood/wind) events;
    - Accelerated erosion.

8. In response to these risks, we will, in time, need to:
    - Relocate assets – individual transmission line structures, as well as substation sites – to address erosion, coastal inundation and increased flood risks;
    - Reinforce/raise assets – to increase resilience to flooding, wind and erosion events;
    - Increase vegetation clearance – to address increased wind and wild fire risks around our lines.

9. We have a number of asset management programmes underway to understand and actively manage our climate risks, including:
    - Improving the resilience information for our assets;
    - Developing resilience risk mitigation options;
    - Embedding resilience into our asset management planning; and
    - Developing and managing contingency plans for each threat.

What we are doing

10. In 2020, Transpower started work on its three-year implementation programme of the recommendations of the Taskforce for Climate-Related Financial Disclosures (**TCFD**). We have since articulated our climate-related physical risks, transition risks and developed a range of climate risk scenarios in accordance with the TCFD guidelines and the proposed XRB New Zealand Climate Standard 1..

    Relevant extracts from Transpower's Integrated Report 2020/2021 are **attached**.

Summary: what we need to successfully adapt to climate change

11. Despite being well underway in understanding our climate risks and adaptation activities, we need:

    - Up-to-date data about climate change impacts at a national level;
    - As much notice of an intention to retreat, to input into our asset management practices in the intervening period;
    - The ability to fund adaptation projects, including necessary changes to the Commerce Act. (We note that a review of the input methodologies is underway);

- The full suite of environmental and property legislation to strongly enable adaptation activities to be approved and constructed, and in a way that is proportionate to the risk;
- A formal role for nationally significant infrastructure operators, in determining tolerability of risk via the CAA and Regional Spatial Strategies (RSSs) under the SPA;
- A NAP that enables these needs to be met, including by:
    i. Recognising the broad range and scale of infrastructure throughout the country – with the associated variation of standards for the design and maintenance of that infrastructure;
    ii. Recognising the complexity and nuance of risk assessments (and standards) that apply to infrastructure, including Grid infrastructure, and ensuring a role for nationally significant infrastructure operators in the scoping of any standards work;
    iii. Providing up-to-date information about national risk, to allow informed decision-making;
    iv. Recognising a Transpower developed and specific adaptation plan.

We expand on these matters throughout this submission.

Comments on the Discussion Document

Draft national adaptation plan

12. At page 7, the Consultation Document seeks feedback about the action any business, organisation or community is taking to address climate change risks, to include in the national adaptation plan in August 2022.

13. As can be seen from our Integrated Report, Transpower has taken significant steps since 2020 to understand the impacts of climate change on our business. The risks to our assets, and their resilience has been a key part of this work.

14. Transpower does not have a single document that is our adaptation plan. However, at this stage we have a number of documents that effectively form our plan. As required by the TCFD reporting, and XRB guidelines, we will be preparing a single plan.

15. Reference to the development of a Transpower Adaptation Plan by 2024 could be included in the NAP, in much the same way that reference is made to Waka Kotahi preparing a plan (see page 67 of the Draft NAP for this priority action). This plan would outline how Transpower will take action to adapt to climate change, through the design, delivery and operation of the Grid. It will address exposed existing assets and new investment in infrastructure, as well as consider adaption in maintenance programmes. The plan would consider multiple risks to the Grid from climate-related hazards, including sea-level rise, flooding and erosion.

Managed retreat

16. The Consultation Document describes managed retreat as:

> "*an approach to reduce or eliminate exposure to intolerable risk. It includes the idea of strategically relocating assets, activities and sites of cultural significance (to Māori and non-Māori) away from at-risk areas within a planned period of time. Managed retreat might be used in response to any climate change impact or natural hazard, whether or not that hazard is caused or exacerbated by climate change*." (page 9)

17. In addition to managed retreat, options of increasing the resilience of the asset in situ are identified – including accommodating the asset (eg. raising it) and protecting it (eg. erecting bunds) (Figure 1, page 9).

18. Transpower considers it important that all options are available through the CAA – the response needs to be proportionate to the risk being faced in any situation, and the characteristics and use of the asset that is at risk. In this regard, not all assets are alike.

19. We need the ability to retreat, where necessary. But, importantly, if the required resilience can be maintained with the asset remaining in situ, that also needs to provided for. Even within a single substation site, it is possible that the different service levels required of assets mean that different responses are warranted.

20. Where assets are to retreat or relocate, that needs to be enabled in an efficient manner. By way of example, if two transmission structures are at risk, only retreat/relocation of those assets should be considered – the location of the remainder of the line should not be brought into question unless ancillary works are required to enable the relocation of those assets.

21. It is likely that some Grid assets will be located in sensitive environments, and need to retreat further into those areas. Property rights will likely also be required. The regulatory frameworks, beyond the proposed NBA, SPA and CAA must be enabling. Amendments must be made to the Public Works Act, Wildlife Act, Conservation Act, Marine and Coastal Areas Act, among others.

Objectives and principles

22. The Consultation Document identifies 5 key objectives and 6 principles to guide the development of legislation and 4 key objectives and 9 principles to guide funding issues.

23. Transpower considers that the objectives and principles are appropriate, subject to the following:

- the objectives and principles omit any role for infrastructure operators. We consider it appropriate, and crucial, that nationally significant infrastructure operators (such as Transpower) have a formal role in assessing whether there is an intolerable risk to their network. What is an intolerable risk to

Transpower will likely be quite different from other infrastructure, and different from communities more generally[2].

- managed retreat must be proportionate and fit for purpose:
    i. (subject to (ii) below), only the assets identified by an infrastructure operator as being subject to an intolerable risk should need to retreat or be protected. In this regard, the need for discrete adaptation activities on a part of a linear asset should not open up opportunities for opposition to the location of the broader asset or form of that asset.
    ii. ancillary infrastructure must be enabled, not merely adaptation of the assets subject to the intolerable risk. For infrastructure networks, changes may be required outside of the area or assets subject to an intolerable risk. For Transpower, this ancillary infrastructure could range from new access tracks to new structures, new lines to relocated substations, strengthened, relocated and/or additional structures either side of the part of an at-risk line
- as much advance notice as possible must be given – of data to enable risks to be assessed, and not merely the potential for communities to retreat[3]. Infrastructure operators must be able to make informed decisions about the extent they maintain any at risk infrastructure (or infrastructure that will not be needed in the medium-long term) well in advance of any retreat. Importantly, time must be given to enable fit for purpose solutions across multiple infrastructure operators.
- "protection of the natural environment" cannot be at the expense of, and prevent, adaptation. A principle to protect the environment could result in environmental bottom lines, and create barriers to efficient retreat or adaptation. A principle is required that all forms of adaptation will be enabled in an efficient and cost-effective manner.
- adaptation and resilience projects must be enabled in their own right, rather than being an "add-on" to existing projects. In this regard, legislation applying to regulated monopolies must allow climate change impacts to factor into and drive necessary business case and funding decisions.

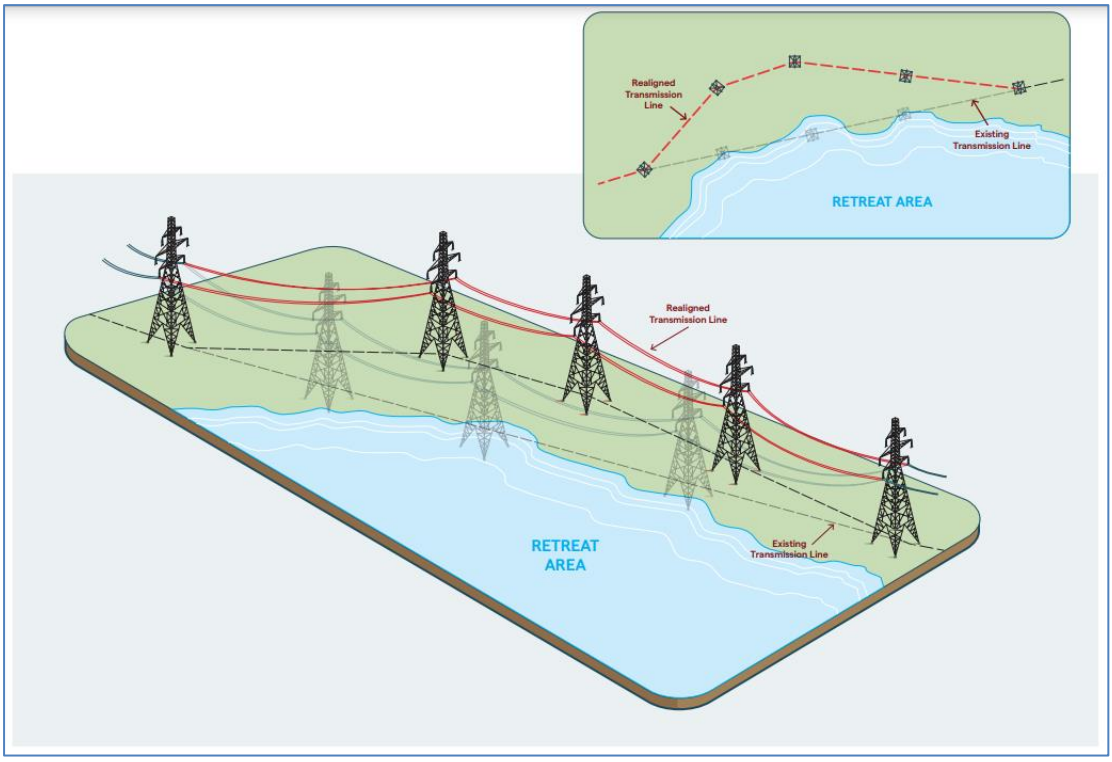
24. **Scenario 1** below simply illustrates some of the issues associated with the retreat of linear infrastructure. Three structures on the transmission line are subject to an intolerable risk and must relocate away from the coast. To limit the costs of the retreat we would seek to limit the extent of the project – in this instance by relocating 3 structures, and potentially strengthening the structures either side. Transpower considers that any retreat must be proportionate to the risk - in relation to the extent of the project and its associated costs. If retreat into the neighbouring bush is prevented (due to environmental protections/bottomlines) a longer length of the line

[2] By way of example, Transpower uses a Board-approved Risk Appetite Statement as one of the cornerstones of our risk management framework.

[3] We note that Table 2 contains a principle to "minimise cost over time by providing as much advance notice as possible." We strongly support this principle, but consider that the principle must be broadened beyond a focus on cost/funding, to be captured in Table 1.

would need to be relocated (or the entire line potentially rebuilt), with associated cost and time implications for the necessary adaptation activities. There may also likely be implications for mitigation projects, as resource is diverted to a larger adaptation project. To avoid these issues, retreat into the neighbouring bush would need to be enabled, through environmental, property and funding legislation.

Scenario 1



25. Transpower's recently cancelled Hairini-Mt Maunganui A line project highlights the challenges under the RMA of relocating existing assets near environmentally sensitive areas. The driver for the project was the condition of, and risk to, two poles in an area subject to coastal erosion. The existing line crosses Rangataua Bay (in Tauranga Harbour), with one transmission tower being located in the harbour. Rangataua Bay is identified as an outstanding natural feature and landscape (ONFL) in the Bay of Plenty Regional Coastal Plan.

26. Transpower was granted consents to realign the line away from the cliff, and in the process remove the line from the Māori-owned land and residential properties, and the tower from the harbour. The consents were confirmed by the Environment Court. A community group, with support from the Marae, opposed the project. Opposition centred on the impacts on the Marae and associations with the ONFL, and alternatives to an overhead realignment. It appeared that an underground solution was preferred, which Transpower had ruled out.

27. While the consent applications were lodged in October 2017, litigation was continuing in 2022, and set to continue[4]. Transpower ultimately decided to cancel the project, surrender the consents, and maintain the poles in situ.

28. We consider that this project highlights the complex issues that need to be worked through to enable adaptation activities, including:

- the need to locate in sensitive areas – and reconciling tensions between protecting the environment and enabling adaptation activities;
- the solution being proportionate; and
- adaptation projects not being as an opportunity for opponents to seek a different form of asset.

29. Adaptation activities will also require assets to be upgraded – even when rebuilt in sensitive environments. The impact of the 2019 Rangitata River flooding on the Grid highlights this point. Nine structures on the ROX-ISL A line were affected, including one structure being washed away and two collapsing. The replacement structures were on the same alignment, with structures located in the riverbed. Foundations increased in depth from 10 metres to 20 metres. The possibility of placing the new structures outside of the riverbed was raised. To avoid structures being located in the riverbed, a ~1.8km span between two ~200m tall structures would have been required. The structures would have been 130m higher than the tallest structure in the country. This solution was discounted.

30. It is likely adaptation activities that involve increasing structure height, increasing foundation and structure strength and relocating structures will be considered upgrades, rather than maintenance activities. As a result, to enable works of this kind, any adaptation legislation must enable upgrades to existing infrastructure, not merely maintenance. Further, it must enable practicable and proportionate solutions for at risk infrastructure.

31. The stages of managed retreat in (Figure 2) appear to be generally appropriate. But, we are concerned the image suggests an all or nothing approach – that an area is at risk, retreat occurs for everyone and everything in the relevant area. In our view, the situation is much more nuanced – what is an intolerable risk for residential development may not be for any or all infrastructure in the same area. It is important that the criticality of each infrastructure type is considered at both a general level, and then at an individual asset level to understand what the risk is.

32. Figure 2 is silent about the role of infrastructure, including nationally significant infrastructure, in carrying out a risk assessment and determining the level of risk. It is proposed the risk assessment is carried out by the Council and informs the RSS. In

[4]The High Court in *Tauranga Environmental Protection Society v Tauranga City Council* [2021] NZHC 1201 overturned the Environment Court decision and referred the matter back for further consideration. The High Court essentially found that the project would adversely affect the values and attributes of the ONFL, which should be avoided unless alternatives were not possible. As technically feasible alternatives were possible, the policy pathway for relocating the line in the ONFL was not met. (The Court considered that matters of costs did not factor into whether an alternative was "possible".)

our view, any assessment of risk cannot be imposed on us – it must be determined by Transpower for each individual Grid asset. If development of RSSs are to be a key step in relation to retreat, we consider that nationally significant infrastructure operators should have a formal role in the RSS process.

33. To illustrate the nuance and complexity of matters, we note just one input into any Transpower risk assessment – return periods[5]. We use return periods as criteria to assess the ability of our assets to withstand natural hazards.

34. By way of example, we may allow for flooding of a given transmission tower every 20 years, whereas we build our IL4 buildings to withstand a 1 in 2500 year seismic event. We use a resilience criteria to identify our assets that are more vulnerable to major hazards. Our new build design criteria for substation assets is to withstand a 1 in 450 year flood. But, to identify our most vulnerable substations, we use a 1 in 250 year flood as a threshold. Existing sites beneath this threshold will need planning to determine whether mitigation works can be undertaken, and if so, whether they can be integrated into future site upgrades. We also note that climate change has the effect of reducing return periods. By way of example, what used to be considered a 1 in 100 year flood may now be expected to reoccur every 75 years in some locations. The reduction in return period is also factored into the design of any mitigation work.

Key comments on the Draft NAP

Availability of up-to-date data

35. The purpose of the NAP is to enable New Zealanders to prepare for and adapt to the impacts of climate change. The Draft NAP provides three focus areas and five outcome areas and objectives. However, the Draft NAP provides no indication of the kind of future New Zealanders need to prepare for. It is critical that the NAP provide direction about scenario development – to ensure efficient and consistent consideration by all parties involved in adaptation considerations throughout the country.

36. The Intergovernmental Panel on Climate Change's (**IPCC**) latest (6th) Assessment Report provides five diverging potential climate scenarios, ranging from a 'benign' scenario with limited global heating to a climate-runaway scenario. The world is currently on a trajectory somewhere in the middle of the IPCC scenarios. Despite the release of a 6th IPCC Assessment Report, the country's current climate change predictions are based on the 5th IPCC Assessment Report. Our climate projections date back 4 years, and our sea level rise projects date back 5 years.

37. The NAP should identify the scenario or scenarios that New Zealanders should use as a reference point for their preparation and adaptation efforts. These must also be up-to-date, and kept up-to-date.

38. The need for such direction flows through to a number of actions within the Draft NAP. By way of example, when scoping a 'resilience standard or code for infrastructure' the level of resilience to be targeted must be known.

[5] A return period gives the estimated time interval between events of a given size/intensity.

Sequencing and inter-relationship of actions

39. The Draft NAP proposes a wide range of actions, many with a relatively short (2 to 6 year) time horizon. There is no clear hierarchy of actions, nor indicated sequencing, where actions overlap or are inter-related.

40. As an illustration, the crucial action of providing access to the latest climate projections data is proposed to be completed in two years - by June 2024. This data is essential for drafting strategies and developing concrete plans to respond to climate change. This timing is likely to seriously impede progress with the scoping and detailed planning of most other actions.

41. In our view, it is important to prioritise key actions within the NAP – with data gaps being addressed early.

Focus area one: Reform institutions to be fit for a changing climate

42. Transpower agrees with focus area one – the RMA is outdated and ill-equipped to address the climate challenges we face. We are heavily involved in the resource management system reform, and intend to be involved in the CAA as it is developed. We intend to be involved in the emergency management reform as it progresses.

43. We agree that:
    - the National Planning Framework (**NPF**) will be important for setting strategic direction and guidance on how to achieve the climate outcomes of the NBA;
    - Regional Spatial Strategies (**RSSs**) will be important in identifying areas of risk and potentially retreat.

44. However, it is important that both the NPF and the RSSs, as well as the primary legislation, enable infrastructure to adapt to climate change. As discussed in the context of our submission on the Managed Retreat, climate change adaptation must be proportionate to the risk being faced, and not used as an opportunity to oppose or relitigate the location or form of the existing infrastructure.

45. Another aspect of the Draft NAP under Focus Area One is to Implement the National Disaster Resilience Strategy. We note that this strategy was finalised in 2019. We query whether it is up-to-date, and whether it should be refreshed prior to implementation.

Focus area two: Provide data, information, tools and guidance

46. Transpower strongly supports the proposed approach of having nationally consistent climate projections data. However, as discussed above, we are concerned about the timeline proposed and the impact that will have on subsequent actions.

47. We also note that the development of an Adaptation Information Portal has a 5-6 year lead time. This portal could be of value well before then. We expect the portal will provide up-to-date climate data and information that is needed, including by

Transpower, to report under the XRB's Climate Standard which comes into effect from 2024. We consider it important that this initiative is fast-tracked to ensure New Zealand's climate reporting entities are all reporting on the basis of the same information. In the absence of this information, reporting entities will need to develop their own set of climate data and information, resulting in variability in both input information and results reported.

48. A further action under focus area two is to develop non-statutory guidance to enable decision makers to assess and plan to manage climate-related risks. There may be value in developing guidance for parties that are only beginning to consider climate risks. We would urge that any guidance reflects and is consistent with existing reporting regimes (such as TCFD and XRB requirements).

Focus area three: Embed climate resilience across government strategies and policies

Natural Environment

49. We agree that the climate crisis is a biodiversity crisis. However, the electricity industry has a key role to play in mitigating the effects of climate change – our infrastructure is, and will need to be, located in areas that should otherwise be protected. The need to adapt our activities to the effects of climate change will also result in changes to assets in these areas (eg. relocating further into an areas, or constructing stronger, deeper foundations).

50. Transpower supports the recognition and need to take action to ensure the country's natural environment is considered through the NAP. Understanding and minimising our impacts on biodiversity is a core part of Transpower's infrastructure planning and design, as well as our operational activities. However, we will need to reconcile tensions between protecting the natural environment and enabling necessary infrastructure to address climate change – long linear infrastructure simply cannot avoid all areas.

51. We agree it is appropriate to implement:

- the proposed National Policy Statement on Indigenous Biodiversity;
- the Water Availability and Security programme[6];
- the National Policy Statement on Freshwater Management 2020

[6] The Draft NAP (at page 60) refers to this programme as applying catchment-based solutions. This is appropriate – but the programme must also recognise the importance of hydro-generation to security of electricity supply at a national level. Any reduction in availability of water for generation will have flow on consequences.

Infrastructure-related

52. It is proposed to develop a methodology for assessing the impacts on physical assets and the services they provide. We agree that such a methodology could be of value. However, any methodology needs to be consistent with TCFD and other frameworks that are already embodied in the CCRA. Further, and as discussed earlier in this submission, clarity will need to be provided about what level resilience is to. The climate scenarios will drive preventative actions – and up-to-date data is crucial to good decision-making.

53. Reference is made to scoping a resilience standard or code for infrastructure, and actions to support the integration of climate adaptation and mitigation into new and revised standards. As discussed earlier, there is significant nuance and complexity to the standards that Transpower meets – let alone all other infrastructure operators. While we agree standards and codes are important, we have strong reservations about the development of an overarching code that applies to all infrastructure.

54. We recognise that there may be infrastructure operators who would value the development of such a standard or code. Transpower is however happy to assist officials in their scoping exercise, so they are aware of Transpower's existing suite of standards and approach to resilience.

55. Finally, we note an action to develop a national energy strategy. Transpower supports the development of this strategy. We consider this strategy is important given the crucial role of energy, and the transition to renewable electricity, will play in our climate response.