

29 May 2023

John Clarke  
General Manager, Grid Development  
Transpower New Zealand Ltd  
PO Box 1021  
Wellington 6140

By email: [REDACTED]

Dear John

**Request for Transpower to consider providing additional information to support Net-Zero Grid Pathways Major Capex Proposal (Stage 1)**

As you will be aware, we have identified issues with Transpower's preferred investment option for Stage 1 of the net-zero grid pathways (NZGP1) major capex proposal (MCP). Following discussions between our teams, I am writing to you to request that Transpower consider submitting NZGP1 with an addendum or amendment by other means, such as a redraft, that provides clarity on:

- the investment need for the NZGP1 MCP;
- the technically feasible investment options considered by Transpower to address the investment need; and
- Transpower's proposed investment (i.e. preferred investment option), particularly how that meets the investment need.

We have also identified that the key driver for the timing of Transpower's proposed HVDC investment is the assumption that in 2024 Tiwai will exit and lower South Island renewable generation can be released north. The likelihood of Tiwai exiting in 2024 has changed since Transpower started planning for NZGP1.

The addendum provides an opportunity for Transpower to satisfy us and interested persons about how it will mitigate the risk of over-investment associated with the HVDC stage 1 investment in case Tiwai does not exit in 2024, as well as raising any timing considerations that are relevant to the test in the Capex IM. We consider that a commitment of this nature will be helpful and request that Transpower consider including this in the addendum.

I attach an overview of the information that we consider will assist our evaluation. The addendum will enable us to complete our evaluation of Transpower's proposal and consult on a draft decision. Any views on the MCP expressed in this correspondence are those of Commission staff, not Commissioners.

We appreciate the engagement with Transpower to date as we have considered the NZGP1 MCP. If you require any additional clarity regarding our request, please contact Matthew Clark, Manager, Transpower and Gas.

Yours sincerely

Andy Burgess

General Manager, Infrastructure Regulation

Encl.

## **Attachment: Overview of information that will assist the Commission's evaluation of Stage 1 of the Net-Zero Grid Pathways Major Capex Proposal**

1. This attachment is the result of a Commerce Commission (Commission) staff review and various discussions between Transpower and Commission staff on the NZGP1 major capex proposal (Proposal). The attachment outlines suggestions and clarifications following that review and discussions of the Proposal.
2. The attachment reflects Commission staff views only. It does not carry the views of Commissioners or set out any decisions that have been made. The intention is that any changes to the Proposal will be considered when evaluating the Proposal under Subpart 3 of the Transpower Capital Expenditure Input Methodology Determination 2012 (**Capex IM**).

### **Purpose of the Addendum**

3. We are requesting that Transpower consider an addendum (or amendment by other means) to the Proposal (**Addendum**) because:
  - 3.1 following our evaluation, we have identified that Transpower's preferred investment option does not appear to meet the stated investment need for Wairakei and CNI;
  - 3.2 the likelihood of Tiwai exiting has changed since Transpower started planning for NZGP1. The Addendum provides an opportunity for Transpower to satisfy us and stakeholders how Transpower will mitigate the risk of over-investment associated with the HVDC stage 1 investment in case Tiwai does not leave in 2024 or that the demand in that location is replaced; and
  - 3.3 there are inconsistencies in the proposal that Transpower can address to make this proposal clearer for stakeholders.
4. The Addendum should provide us with sufficient information to allow us to assess the Proposal against the test set out in the Capex IM. The Addendum should also provide clarity on Transpower's investment proposal to interested persons, including clarity on:
  - 4.1 the investment need for NZGP1;
  - 4.2 the technically feasible investment options considered by Transpower that will address the investment need; and
  - 4.3 Transpower's proposed investment (i.e. preferred investment option) following consideration of the two items listed above.

## Overview of changes to set out investment options and support Transpower's preferred investment option

5. Transpower states "The investment need of NZGP1.1 is to enable the efficient dispatch of new generation and a reliable supply for future demand growth over the interconnected grid" (page 12). However, Transpower's preferred investment option (Option 10) does not include all staging projects required to meet the specific investment need in Transpower's proposal.
6. In the Addendum, Transpower should demonstrate and confirm that all investment options meet the definition in the Capex IM for an investment option.<sup>1</sup> This means removing any non-complying options from the current list. To provide additional clarity regarding Transpower's preferred investment option, we also request that Transpower consider:
  - 6.1 amending Table 1 in the proposal to adequately reflect the outcome of the preferred investment option. This table should specify the output in terms of both assets and capacity the investment will deliver. If the MCP is approved, these numbers will be used to measure whether Transpower has delivered the approved outputs;
  - 6.2 amending Table 3 to include the staging projects that are included under NZGP1 MCP (including stage 3 projects listed in Table 3 if these are part of NZGP1);
  - 6.3 amending Table 4 to remove the outputs that are no longer part of NZGP1; and
  - 6.4 reviewing and explaining any other material changes from the proposal document.
7. Below are some points on the three main aspects of NZGP1. They are not necessarily comprehensive. For consistency, Transpower should review the existing NZGP1 proposal to identify any other material differences with what is being proposed in the Addendum.

### Inter-island HVDC capacity

#### *Managing the risks of Tiwai exit*

8. The key driver for the timing of Transpower's proposed HVDC investment appears to be the assumption that Tiwai will exit in 2024. The likelihood of this has changed since Transpower started planning for NZGP1. The Addendum provides an opportunity for Transpower to satisfy us and interested persons how it will mitigate the risk associated with the HVDC stage 1 investment in case Tiwai does not leave in

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<sup>1</sup> The Capex IM defines investment option as a technically feasible solution, including a non-transmission solution, designed to facilitate or meet a specific investment need, other than an option fully funded under a new investment contract.

2024 (and its demand in that location is not replaced). For clarity we suggest Transpower states its risk mitigation options in the Addendum.

9. This addition to the NZGP1 proposal should cover the steps Transpower will take to mitigate the risk of over investment if Tiwai stays beyond 2024 and South Island demand growth exceeds development in new generation in the South Island. It could be in the form of conditions that need to be present, or not present, for Transpower to take specific steps, which would then form part of the Proposal being evaluated by the Commission.

*Description of outputs*

10. We request that Transpower consider explaining in the Addendum:
  - 10.1 whether the increase in capacity from 1070 MW to 1200 MW is correct;
  - 10.2 if so, how that is consistent with the AP1 performance measures; and
  - 10.3 whether the Statcom and filters will negate the impact of HVAC line outages and the pole outages.
11. In regulated performance measures, Transpower stated that the AP1 measure only measures the reduction in the HVDC capacity of poles 2 and 3 due to pole outages. The target for AP1 is 98.75% or 1185 MW and the 2021/22 actual performance is 98.74%. Staff's view is that the Addendum should clarify how the measures in the Proposal and AP1 interact and what HVDC availability (or capability as used now) would the NZGP1 (i.e. stage 1) investment provide.
12. As presented, post the proposed investment, the AP1 measure will be 100% to reflect the impact of NZGP1 stage 1 investment.

*The benefits of investing in NZGP1 stage 1*

13. Transpower has provided an overview of the benefits of the HVDC stage 1 investment. It will provide clarity for us and stakeholders if the Addendum collates all the HVDC issues including the matters covered in our RFIs on HVDC and your further studies.
14. We suggest that the Addendum shows the benefits of the HVDC stage 1 investment separately (ie. not included in the overall benefits of the NZGP1). Some of the benefits to include are:
  - 14.1 Statcom redundancy – Transpower has indicated net market benefit related to having Statcom redundancy. The redundancy benefits would need to be included in the net market benefit. Due to the positive benefit, we suggest the Addendum include sensitivity based on delivery period to substantiate this benefit.

- 14.2 Filter banks - Transpower has indicated that the filter bank would also provide higher system security during the planned maintenance of existing filter banks and mentioned this as unquantified benefits. We consider that Transpower should quantify these benefits rather than categorising them as unquantified benefits.

### **CNI 220kV capacity between Bunnythorpe and Whakamaru**

#### *Required transfer capacity for efficient dispatch of forecast generation*

15. We suggest that Transpower specify the target transfer capacity north of Bunnythorpe rather than a range. This will directly impact Transpower's investment options for CNI. Currently, the increased capacities from the various CNI investment options are different because Transpower has not clearly specified the CNI north transfer capacity that can efficiently dispatch the CNI forecast generation.

#### *CNI generation build plans, power system studies, investment need and investment options*

16. The proposed investment for CNI should be consistent with the investment need. Transpower to confirm the level of transfer capacity north of BPE and that this level of transfer in its preferred investment option satisfy the investment need. Transpower also to confirm that the investment test is based on the level of achievable capacity transfer north from BPE.

#### *Confirmation whether Brunswick -Stratford is part of NZGP1*

17. In the Proposal's investment test spreadsheet it is difficult to ascertain whether the cost of reconductoring the Brunswick – Stratford line is included in the investment test.
18. Given reconductoring of the Brunswick – Stratford line is an output of the Proposal, Transpower should confirm that the costs are included in the investment test.

### **Wairakei ring investment options and outputs**

#### *Wairakei Ring capacity*

19. Since there are two options for stage 2 of the Wairakei ring, replace existing line and build a new line between Wairakei and Whakamaru, both should be included as investment options.
20. The thermal upgrade of the Edgecumbe-Kawerau line should be included as an output of the Wairakei ring investment, because this output relates to increasing the capacity of the Wairakei ring.