



**TRANSPOWER**

*Keeping the energy flowing*

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2 June 2023

By email [REDACTED]

Copy to: [regulation.branch@comcom.govt.nz](mailto:regulation.branch@comcom.govt.nz); [REDACTED]

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

Dear Andy

Thank you for your letter dated 29 May regarding Net Zero Grid Pathways Stage 1 (NZGP1). We appreciate the Commission's efforts to work with Transpower on this major capex proposal (MCP).

We are keen for the Commission to consult on its draft decision on our MCP to gauge the level of understanding and support from our customers. We consider consultation on these investments, where the quantified net benefit analysis appears to be finely balanced and when there are uncertainties around the timing of the need, is beneficial for both the Commission and Transpower.

We will provide the Commission with, and publish, an Addendum to our MCP. To ensure the Addendum is effective in addressing the Commission's questions, we consider it worthwhile to respond to and clarify a few points raised in your letter before providing the Addendum.

### **Investment need**

Commission staff have indicated they are not confident that future stages of our preferred option meet the investment need of the MCP.

As we have discussed with Commission staff, we understand that our preferred option must contain at least one technically feasible option, for the future stages, that will meet the investment need.

The nature of the net electricity market modelling means some technically feasible options that meet the investment need may not have a positive expected net electricity market

benefit. For example, an option we modelled to address constraints through the Central North Island (CNI) was to build a new line. Our modelling indicated this would not generate positive net electricity market benefits.

We initially included the new CNI line as a possible stage 3 of NZGP1 on the basis the investigation during stage 1 might lead to net positive benefits.

Based on the options we consulted on, we do not consider there is a viable option to propose as our preferred option that includes a new CNI line. Therefore, the Addendum will exclude the new CNI line option as a possible stage 3 project output.

### **HVDC stage 1 (STATCOM commissioning)**

As you note in your letter, since we started the MCP process in early 2021, the likelihood of Tiwai exiting in 2024 has changed.

The material benefits in our initial modelling from the proposed NZGP1 stage 1 HVDC investment resulted from the increased South Island generation following a Tiwai exit. The benefits would accrue from increased availability of the maximum HVDC transfer capacity with the addition of a STATCOM.

Additional modelling we have undertaken since we submitted the MCP, indicates even if Tiwai stays post-2024, there are substantial benefits from installing the STATCOM in May 2027.

We understand the Commission's position in seeking assurance that Transpower will mitigate risks to consumers of the STATCOM being installed slightly ahead of need. To address this, we will indicate in the Addendum that the procurement, design, and build of the HVDC STATCOM will be contingent on us quantitatively demonstrating, to the Commission, positive net benefits associated with the investment. The trigger for this could be confirmation of Tiwai's departure date, modelling to show the additional redundancy benefits from the STATCOM, or more certainty in the generation mix or load forecasts.

### **Separating the HVDC modelling**

Commission staff have suggested the Addendum show the benefits of the HVDC stage 1 investment separately. Unfortunately, due to the nature of the MCP in covering multiple investment needs, with the interdependencies between the investments, it is not feasible to model the separate areas of the investments. We also consider this would be a material variation from the short list that was consulted on.

We are keen to provide the Commission and stakeholders with more quantitative analysis of the redundancy benefits from the STATCOM being Commissioned in 2027 regardless of Tiwai's exit. We will not be able to provide this modelling in our Addendum, but we will include it as part of our submission to the Commission's consultation. This will allow the analysis to be available during cross-submissions.

### **Asset performance 1 (AP1) – HVDC energy availability**

We have had several discussions with Commission Staff on the AP1 measure and whether it would be affected by the modelled increase in HVDC transfer capacity from the installation of the new STATCOM.

Since its introduction in RCP1, AP1 (as it is referred to for RCP3) has measured the extent to which Pole 2 and Pole 3 are available, the 'HVDC link'. The HVDC link includes the HVDC system circuit between Benmore and Haywards comprising the converter stations at Benmore and Haywards and the HVDC transmission circuit between them, carried on HVDC overhead line and undersea cable, connecting the converter stations.

AP1 does not include other HVDC and HVAC grid assets that also affect the transfer capacity. This means that AP1 does not measure the overall operational transfer capacity i.e. it does not reflect the historical estimated measure of 1070MW of average maximum capacity, and the forecast increase to 1200MW that may be achieved by installation of the new STATCOM.

During previous RCP determinations we have discussed with the Commission why it is not feasible to use operational transfer capacity to calculate AP1 availability. At a high level, this is because the transfer capacity varies significantly not only due to outages of other HVAC and HVDC assets but also the real time measurement of Wellington load, which is something that Transpower has no control or influence over. We are happy to discuss with the AP1 measure in more detail as part of the RCP4 process.

Andy, thanks again for your letter and the opportunity to provide an Addendum to our submission to clarify and improve it for the Commission and stakeholders. We are aiming to supply this to you by 13 June 2023.

Best regards,

John Clarke  
General Manager Grid Development