15 August 2022

Via email nzgp@transpower.co.nz

Tēnā koutou,

Powerco submission on NZGP1 Major Capex Project (Staged) Investigation – shortlist consultation

Powerco Limited (Powerco) welcomes the opportunity to provide a submission on Transpower's Net Zero Grid Pathways 1 Major Capex Project (Staged) Investigation – shortlist consultation.

Planning for infrastructure investments in a demand growth environment with complex delivery challenges puts the onus on network planners like Powerco and Transpower to carefully consider the nature, scale, and timing of investments. In general, Powerco believes the staging projects outlined in the shortlist consultation paper are the right priorities for New Zealand and supports Transpower's overall approach.

We note, however, that the preferred options identified by Transpower do not appear to sufficiently support upcoming Powerco requirements for bulk supply upgrades. Powerco will continue to work closely with Transpower to address these requirements. The middle ground option is reasonable given the current approaches to transmission planning. Transmission investments can act as enablers to additional generation investments if they reduce connection cost hurdles, which may be relevant given the renewable resources in the lower North Island.

Answers to the summary questions are provided below.

We look forward to engaging with Transpower and stakeholders on future stages of the NZGP project. If you have any questions regarding this submission or would like to further discuss the points we have raised, please contact Matt Ogier (Matthew.Ogier@powerco.co.nz).

Nāku noa, nā,

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Summary questions and Powerco responses

Q1 – Do you agree with our staged approach to this major capital investment programme?

A staged approach is appropriate and the concerns that the paper raises about circuit loadings are real. The paper's primary focus is on increased south – north power flows. While this is obviously very important, Powerco would also like to see more attention given to the North Island regions. For example:

- **Transmission adequacy (capacity and security) in the Western Bay of Plenty area**. This region has high levels of load growth, including supply to Tauranga and Mt Maunganui, and the circuit from Kaitimako to the Okere Tee that supplies Te Matai. The current high levels of load growth seen in the western Bay of Plenty area would be expected to accelerate given the Net Zero Pathway.
- **Hawkes Bay region constraints**. Under high south-north power flow, the 110kV circuits between Bunnythorpe and Redclyffe will probably experience heavier loadings, as could the Redclyffe interconnecting transformers.
- **System split at Ongarue**. The proposal gives consumers in the central North Island a reduction in supply reliability. The paper compares the proposed system split at Ongarue with the system split between Masterton and Mangamaire. However, the two cases are different because the length of circuit between Bunnythorpe and Ongarue is much longer, and because the size of load is greater. The overall loads at Mataroa, Ohakune, National Park and Ongarue aggregate to around 36MVA, while the load at Mangamaire peaks at around 15MVA. More information about the economic costs and benefits of the options would be valuable, including what will become of the reactor currently at Mataroa.

Q2 – Do you agree with our staged approach to this major capital investment programme?

Yes. The intention to publish a NTS shortlist consultation document, assess feedback and consider whether to investigate further appears to be a reasonably practical approach.

Q3 – Is our reduced list of options for enhancing capacity of the HVDC reasonable?

Options 3.1 B1 and B2 are visionary and could provide additional (and probably unforeseen) economic benefits to New Zealand.

Q4 – Is our reduced list of options for enhancing capacity of the CNI 220kV corridor reasonable?

Option C7 should consider the addition of a 110kV series reactor at Ongarue to supplement the reactor already at Mataroa as an alternative to installing a changeover arrangement. Proposals to consider dynamic line rating are interesting because they would bring additional probabilistic complexity to the System Operator in the context of the electricity market - it is not surprising that they will not be considered at this stage.

Q5 – Is our reduced list of options for enhancing capacity of the Wairakei Ring reasonable?

Powerco has no comments to make at this stage other than the statement "The CNI preferred solution is not to build additional HVDC assets" seems to speak against the plans to consider the options in Sections 3.1 and 3.2.

Q6 – Are our scenario weighting sets reasonable?

Powerco has no comments to make at this stage.

Q7 – Is our shortlist of HVDC and CNI options reasonable?

Powerco has no comments to make at this stage.

Q8 – Is our shortlist of Wairakei Ring options reasonable?

Powerco has no comments to make at this stage.

Q9 – Is our choice of the preferred option reasonable?

Powerco has no comments to make at this stage.

Q10 – Is our conclusion that upgrading existing assets is more economic than bypassing the existing grid reasonable?

Powerco has no comments to make at this stage.

Q11 – Do you agree that our choice of preferred option is robust against sensitivity analysis?

Powerco has no comments to make at this stage.