

NZGP1 proposal

Attachment F

Expected impact on transmission charges

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1 Purpose

Transpower is proposing its preferred option for stage 1 of phase 1 of Net Zero Grid Pathways (**NZGP1.1**). As detailed in the proposal, the preferred NZGP1 option includes the HVDC, Central North Island, and Wairakei Ring investments.

Under the new transmission pricing methodology (**TPM**),¹ the covered costs of post-2019 investments in interconnection assets and transmission alternatives (benefit-based investments or BBIs) are recovered from customers identified as beneficiaries, in proportion to their expected positive net private benefit (**EPNPB**) from those investments. The TPM contains the methods for calculating charges for BBIs (benefit-based charges or BBCs).

The purpose of this document is to provide information to the Commerce Commission and stakeholders about the estimated increase in transmission charges associated with the proposal.

2 Relationship of the TPM with the Investment Test

The Commerce Commission determines how much revenue Transpower, as the owner and operator of the National Grid, can recover from its customers according to its regulation of Transpower under Part 4 of the Commerce Act (allowable revenue). This includes regulating Transpower's investment decisions through the Capex IM.

The TPM, set by the Electricity Authority consistent with the TPM Guidelines it approved in June 2020, determines how allowable revenue is recovered from (or allocated to) each of Transpower's customers in each pricing year. Once Transpower's capital expenditure proposal has been approved by the Commerce Commission, whether as major capex or base capex, the costs of that investment (and an allowable return on investment) may be recovered through the TPM.²

The Commerce Commission has noted:

*The new TPM guidelines and the new TPM [approved by the Electricity Authority in April 2022] under them will not affect the regulatory approval process for assessing the [Major Capex Proposal] under the Capex IM or the amount Transpower can recover in transmission charges for the investment.*³

¹ The TPM is Schedule 12.4 to the Electricity Industry Participation Code (the Code), [Part 12 -Transport](#).

² More information about the TPM, including a short [Guide to the TPM](#) is available [here](#).

³ Commerce Commission [Decision and reasons on Transpower's Bombay Otahuhu Regional MCP, 19 March 2021](#), paragraph 27.

3 Benefit-based investments and charges

A key component of the TPM is that the costs of all investment in the interconnected grid commissioned after 23 July 2019, known as benefit-based investments (BBIs), must be recovered as benefit-based charges (BBCs). BBCs allocate the cost of BBIs to those customers who are expected to benefit from them. All investments made as MCPs are comprised of 1 or more BBIs.⁴

The TPM contains two “standard methods” and a simple method. For BBIs expected to cost more than \$20m (high-value investments),⁵ a BBC “standard method” must be applied: the price-quantity method or the resiliency method. The resiliency method applies where the investment need is primarily attributable to mitigating a risk of cascade failure or a high-impact low-probability event. If the resiliency method does not apply the price-quantity method applies.

Both the standard methods require Transpower to determine investment-specific beneficiaries and their relative expected benefits. The approach to doing so must be as consistent as reasonably practicable with our application of the Investment Test. The TPM also requires Transpower to publish a BBC Assumptions Book (assumptions book) containing the assumptions and methodologies Transpower intends to apply for allocating the costs of BBIs.⁶

4 Applying the TPM to NZGP

This NZGP staged MCP application seeks approval to recover the costs of investing to deliver the shorter-term initiatives (NZGP1.1). These investments (if approved by the Commission and made by Transpower) will be BBIs. The proposed BBIs comprised in NZGP1.1 are as follows:

- HVDC Reactive Support BBI: New reactive plant at Haywards to enhance the availability of maximum transfer over the HVDC.
- CNI BBI: Tactical thermal upgrades (TTUs) of the Tokaanu-Whakamaru and Bunnythorpe-Tokaanu lines and duplexing of the Tokaanu-Whakamaru lines, and other components⁷ to enhance the capacity of transfer through the central North Island (CNI)
- Wairakei BBI: TTU of the Wairakei-Whakamaru C line to enhance the capacity of the Wairakei Ring and TTU of the Edgumbe-Kawerau 220 kV circuit

⁴ If an MCP results in any new connection assets (as defined by the TPM) the costs of the connection assets will be recovered as connection charges.

⁵ The TPM defines a high-value investment by reference to the base capex threshold in the Capex IM, which is currently \$20m.

⁶ The current version ([v1.1](#)) of the BBC Assumptions Book (including supporting materials) is available at [TPM benefit-based investment allocations | Transpower](#)

⁷ Implementing VLR and TTU of the 220 kV Bunnythorpe-Tokaanu A and B circuits, splitting the 110 kV Bunnythorpe-Ongarue A circuit at Ongarue, upgrading protection on the 220 kV Huntly – Stratford 1 circuit on the Huntly- Taumaranui A line and Stratford-Taumaranui A line, and replacing the special protection scheme at Tokaanu.

4.1 Proposed starting allocations and indicative BBCs: CNI and HVDC Reactive Support projects

Transpower's Grid Pricing team recently consulted on its proposal to treat the CNI, HVDC Reactive Support and Wairakei components of the NZGP1.1 as separate BBIs, and proposed starting BBI customer allocations (starting allocations) for the CNI and HVDC Reactive Support BBIs, calculated under the TPM.⁸ The NZGP1.1 BBI allocations consultation package is available on our [TPM current consultations webpage](#). It comprises:

- [Consultation Paper](#): Proposed starting BBI customer allocations for NZGP phase 1 CNI and HVDC Reactive Support projects
- Draft Records of our application of the TPM for [CNI](#) and [HVDC Reactive Support BBIs](#)
- Post Processing Models for [CNI](#) and [HVDC Reactive Support BBIs](#)
- Summaries of modelling data outputs and inputs from the wholesale market model for [CNI](#) and [HVDC Reactive Support BBIs](#)
- EY technical assurance for [CNI and HVDC Reactive Support BBIs](#)
- KPMG technical assurance for [CNI](#) and [HVDC Reactive Support](#) BBIs
- Chapman Tripp legal assurance for [CNI](#) and [HVDC Reactive Support](#) BBIs

Proposed starting allocations and corresponding indicative BBCs for each benefitting customer are in section 6 of the consultation paper.

The consultation ran from 27 April to 6 September 2023. No submissions were received. Following any decision by the Commission to approve this NZGP MCP proposal, we would finalise calculations of the starting customer allocations for the CNI and HVDC Reactive Support BBIs. Should the Commission's process result in changes to the MCP, we may need to consult again.

4.2 Indicative starting allocations and BBCs: Wairakei project

The Commission's draft decision on Transpower's Capex IM is to raise the base capex threshold to \$30m, which would result in the BBC simple method applying to the Wairakei BBI. Consequently, we have paused our work on the Wairakei starting allocations pending the Commission's final decision on the Capex IM (expected December 2023).

We have calculated indicative starting allocations and BBCs for the Wairakei project on the assumption the simple method will apply. These are in attachment G to this consultation package.

⁸ The starting allocations and covered cost for the CNI and HVDC Reactive Support BBIs will be used to calculate each investment's BBCs.

4.3 Future stages of NZGP

The NZGP1.1 proposed costs associated with preparing for future stages of the NZGP staged MCP will not result in new BBCs, because they will not be capitalised until associated investments are commissioned. Any such investments will be subject to a future proposal to the Commerce Commission, that will follow the required Longlist and Shortlist consultations process towards an application to invest. At this stage no specific investments have been confirmed, no capital cost estimates can be made and consequently it is not possible for us to give any indication of potential allocation or indicative charges.

5 Estimated increase in transmission charges

This section describes the methodology used to estimate the increase in transmission charges due to the NZGP1.1 BBIs in accordance with clause 7.5.1(1) of the Capex IM. The indicative transmission charges are in attachment G.

We have shown the total indicative charge attributable to each affected GXP/GIP by multiplying the covered cost for each BBI by its indicative allocations (clause 7.5.1(1)(c)(iii) of the Capex IM).

We have used the gross AMD used to calculate residual charges to calculate the indicative charge for each affected GXP (or GIP with offtake) on a \$/kW basis (clause 7.5.1(1)(c)(i) of the Capex IM).

We have used the offtake intra-regional allocators (IRAs) during the capacity measurement period from 1 Sep 2017-31 Aug 2022 to calculate the indicative charge for each affected GXP (or GIP with offtake) on a \$/MWh basis (clause 7.5.1(1)(c)(ii) of the Capex IM).

The covered cost used in these calculations is from the 2033/34 pricing year, when the combined covered cost is expected to peak for these BBIs.

Note, these charges illustrate the indicative BBCs associated with each BBI, but not the decrease in the residual charge as a result of commissioning the BBI. This decrease is a result of the covered cost calculation attributing some of Transpower's operating costs to the BBI (in proportion to the BBI's depreciation), which shifts revenue from the residual to the benefit-based charge. In other words, the increase in Transpower's revenue as a result of these BBIs is smaller than the covered cost attributable to the BBIs.

