TRANSPOWER

Tararua Enabling Renewables: Major Capex Proposal Long List Consultation

Attachment 3: Investment Test Parameters

May 2026

Option evaluation for enabling investment

We aim to take a broad approach to evaluate what the best grid investment options are to unlock the renewable generation potential of this region. As this is an enabling investment, there may be different optimal pathways depending on how much generation is likely to commit, and this will form an important part of future consultations and determining a path forward.

Our assessment will test what input assumptions would need to hold (including for more ambitious development plans such as a coordinated 220 kV regional approach) to be economic, and what renewable generation they could unlock if those conditions eventuate.

One tool we will use to inform this assessment is the Investment Test (a costs-benefits analysis). We will apply it to a refined short list of development plans and to help identify the circumstances in which the various upgrades could deliver greater net benefit.

The Capital Expenditure Input Methodology (Capex IM)[1] sets out the major capex consultation requirement. Two specific Investment Test parameters are listed, requiring that Transpower specify:

- any non-standard values or amounts for the calculation period or value of expected unserved energy that it may use for the purpose of the Investment Test
- any non-standard discount rate that it may use for the purpose of the Investment Test.

As this is an enabling renewables investment, we may use non-standard assumptions and approaches where appropriate. This attachment describes the default values for each of these, specifies where we have chosen alternate values for the parameter, and provides our rationale for using an alternate value.

Further, any investment approved by the Commerce Commission through this MCP process, and made by Transpower, will be a benefit-based investment (BBI) under the Transmission Pricing Methodology (TPM) and its costs will be recovered as benefit-based charges (BBCs).[2] However, we may consider alternative funding arrangements in addition to the MCP process.

The TPM requires Transpower to consult on and publish a BBC Assumptions Book (Assumptions Book)[3] that contains the assumptions and methodologies we intend to apply for in allocating BBCs. The TPM also requires our application of the TPM to be as consistent as reasonably practicable with our application of the Investment Test.[4] Below we note some of these assumptions as they relate to Investment Test parameters. More background on the TPM is in Attachment 1 (section 3.2).

1 Transpower Capital Expenditure Input Methodology, Schedule I, I1 and I2.

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

3 The current version of the BBC Assumptions Book (including supporting materials) is available at Assumptions book | Transpower

4 TPM clause 43(5).

1 Calculation period

The Capex IM states that the default calculation period for costs and benefits is 20 years but allows for a different period to be used if we consider it appropriate.

Some transmission assets have long lives, greater than 20 years, so relative benefits will continue to accrue for some options after 20 years. For the Tararua Enabling Renewables investigation, the timing of generation connections and the potential for a coordinated regional upgrade (including potential 220 kV options) means that some benefits may be realised over a longer horizon as generation is progressively enabled and connected.

We propose using a calculation period to 2055 for the Tararua Enabling Renewables analysis, to better capture the costs and benefits over the useful life of the assets. Although this is not the full economic life for some options, we consider this to be an appropriate trade-off between assessing benefits over the economic life of an option and the uncertainty regarding far-off benefits. The effect of discounting future benefits to present values does diminish this effect, but nevertheless it can be significant.

As part of this long list consultation, we also seek stakeholder views on whether a longer calculation period than 2055 would be more appropriate for assessing coordinated regional upgrade development plans, noting that we do not propose using a period shorter than the Capex IM default of 20 years.

Q14. Do you consider the proposed calculation period to 2055 appropriate for this investigation? Or do you think we should use a calculation period longer than 2055 to assess the economics of the investment options? If yes, what end year (or number of years) would you suggest, and why?

2 Value of expected unserved energy

The Capex IM states that the default value of expected unserved energy is equivalent to the value defined in the Electricity Industry Participation Code and allows for a different value to be used if appropriate.

The value of expected unserved energy is the assumed value to consumers of losing electricity supply as a result of an unplanned outage and is typically used to assess reliability benefits where options deliver different levels of reliability of supply.

For the Tararua Enabling Renewables MCP, we are not planning to assess reliability benefits. Therefore, we will not apply a value of expected unserved energy in our benefit analysis. Instead, we will consider deficit costs, loss costs, and the costs of curtailed renewable generation, based on the electricity market modelling.

3 Discount rate

The Capex IM specifies a default real, pre-tax discount rate of 5%. For this investigation, we propose to use a lower discount rate of 3% as the base discount rate. This reflects the nature of this long list consultation, which takes a broad regional view of how the network could be developed to maximise our ability to connect new renewable generation, unlock regional economic opportunities, national electrification, and support more affordable electricity prices. Using a lower discount rate allows us to explore a wider range of potential network upgrade options without being constrained too early by short-term economic signals, and to better reflect the future benefits of a decarbonised electricity system. Sensitivities of 1%, 5% and 7% will also be tested.

Q15. For this investigation, we propose using a 3% discount rate to better reflect the long-term benefits of enabling renewable generation and supporting more affordable electricity prices. Do you consider a discount rate of 3% (with sensitivities of 1%, 5% and 7%) to be appropriate for this investment?

4 Calculating the expected net benefit

4.1 Electricity market costs and benefits

Electricity market costs and benefits are those received or incurred by consumers of the electricity market during the calculation period, and which will affect net electricity market benefits. These include, but are not necessarily limited to:

- fuel costs e.g., the cost of generating electricity
- cost of involuntary demand curtailment, e.g., the cost of lost load
- cost of demand-side management
- capital costs of modelled projects e.g., future assets that are likely to exist whose nature and timing is affected by an investment option, for instance new generation
- relevant operation and maintenance costs, e.g., costs of existing assets, options and modelled projects
- cost of ancillary services
- cost of losses, including transmission and local losses
- consequential operating expenditure
- third party contributions to the cost of a project
- subsidies or other benefits provided under or arising pursuant to all electricity-related legislation and electricity-related administrative determinations
- competition effects.

Given the nature of enabling investment, we may also consider relevant unquantified benefits and other net economic benefits where they are material to the decision. We will describe these additional benefits, and how we propose to treat them, as part of our short list consultation.

Q16. Are there any unquantified benefits or other net economic benefits that should be considered in this investigation?

4.2 Project costs

Project costs are costs reasonably incurred by Transpower prior to or during the calculation period, in undertaking a major capex project. These include, but are not necessarily limited to:

- capital expenditure, including capital expenditure for land purchased for an option
- costs payable to a third party for testing
- costs payable for commissioning of assets
- operating, maintenance, and dismantling costs
- compliance costs relating to applicable legislation and administrative requirements.

4.3 Expected net electricity market benefit

We will determine the net electricity market benefit for each short-listed option, for each demand and generation scenario, being the aggregated quantum of each electricity market benefit or cost element less its aggregated quantum of each project cost.

The expected net electricity market benefit is the weighted average of the net electricity market benefit under each demand and generation scenario, where the weighting is that determined for each demand and generation scenario.

4.4 Base case/counterfactual

The Investment Test requires us to determine a base case option from which we can calculate cost and benefit differences to determine an expected net electricity market benefit for an option. Typically, we have chosen options that assume no new investment is made in the grid.

The TPM price-quantity method requires us to determine the factual and counterfactual (the future state of the grid with and without the BBI). The factual is the expected future state of the grid that will result from the completion of the BBI. The counterfactual is the expected future grid state that would result should no part of the proposed investment be completed (i.e., no investment is commissioned).

We propose that the base case used in the Investment Test for this investigation will be consistent with the principles of developing the counterfactual as specified in the Assumptions Book and TPM.

Given the major driver for this project is the connection of potential new renewable generation (rather than demand growth or asset condition), it is likely that the counterfactual would assume no coordinated regional transmission upgrade, and instead reflect a development pathway where:

- generation developers connect individually as projects progress, using project-specific connection solutions (for example, connection assets such as spur lines), rather than a coordinated regional upgrade being delivered up front
- some potential generation projects may be delayed or not proceed where existing transmission capacity is insufficient and the project is not economic without additional transmission capability (i.e., transmission upgrades can “unlock” generation).

Q17. What assumptions should we make about the counterfactual for your project (i.e., without a coordinated Tararua grid upgrade)—including how you would connect, and whether a coordinated upgrade would change your project's timing, cost, or scale?

5 Sensitivity analysis

Sensitivity analysis means consideration, except where not reasonably practicable nor reasonably necessary, of the effect on quantum of variations in the following parameters:

- forecast demand
- size, timing, location, fuel costs and operating and maintenance costs, relevant to existing assets, committed projects, modelled projects and the investment option in question
- capital cost of the investment option in question (including variations up to the proposed major capex allowance) and modelled projects
- timing of decommissioning, removing or de-rating decommissioned assets
- the value of expected unserved energy
- discount rate
- range of hydrological inflow sequences
- relevant demand and generation scenario probability weightings
- in relation to any competition effects associated with an investment option, generator offering and demand-side bidding strategies
- any other variables that Transpower considers to be relatively uncertain.

Q18. Are there any other market costs or benefits which should be reflected in our Investment Test analysis?

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