



TRANSPOWER

Waikato Regional Interconnection Capacity (WRIC): Major Capex Proposal Shortlist Consultation

Overview

October 2026

Contents

1	Overview	3
2	Executive summary	4
3	Purpose and scope of this consultation	6
4	Why investment is needed	7
4.1	Regional demand growth	7
5	Options assessed	9
5.1	Longlist to shortlist process	9
5.2	Shortlisted options.....	9
5.3	Non-transmission solutions.....	10
6	Investment test results	11
7	Preferred option	12
8	Key assumptions	13
9	Major Capex Allowance.....	14
10	Pricing and customer impact	15
10.1	Pricing treatment.....	15
11	Consultation	16
11.1	Consultation information provided	16
11.2	Consultation process.....	16
12	Next steps.....	17
13	Feedback	18

1 Overview

This overview provides stakeholders with a guide to Transpower’s shortlist consultation material for the Waikato Regional Interconnection Capacity (WRIC) project, which is being developed as a major capex proposal (MCP). It summarises the investment need, the shortlisted options, the preliminary investment test¹ results, Transpower’s preferred option for consultation, pricing considerations and targeted questions on which feedback is sought. The accompanying attachments provide further detail on the modelling, technical analysis, and supporting evidence.

¹ The investment test is a key part of preparing an MCP application under the Commerce Commission’s Capex IM framework, and is defined in Schedule D of the Commerce Commission’s Transpower Capital Expenditure Input Methodology (Capex IM).

2 Executive summary

Transpower is consulting on a shortlist of options to increase interconnection capacity into the Waikato 110 kV network. We are seeking feedback on the investment need, the options assessed, the preliminary application of the investment test and Transpower's preferred option. This is an important step before any MCP is submitted to the Commerce Commission for approval.

Following longlist consultation, we revised our assumptions on demand growth, generation availability and regional network developments and have consequently updated our view on investment timing. Investment is required from 2030, when forecast peak demand on the Waikato 110 kV network can no longer be reliably supplied following an outage of a Hamilton 220/110 kV transformer.

Transpower's preferred option is to establish a new 220/110 kV connection east of Hamilton. The **Hamilton East** option would improve supply security into the Waikato 110 kV network, increase interconnection capacity, and support future regional demand growth. It is currently preferred because it provides the strongest overall balance of quantified reliability benefits, resilience, deliverability and longer-term network flexibility.

Establishing a new 220/110 kV connection near **Ōtorohanga**² remains a credible shortlisted option. However, the Hamilton East option performs better in the investment test assessment, with a positive net quantified benefit and an expected \$22.2 million higher benefit than the Ōtorohanga option.

Power system modelling indicates that the Hamilton East option provides significant deferral benefits by delaying the need for a costly, third 110 kV Hamilton–Waihou line that would otherwise be required to maintain acceptable voltage levels under the counterfactual and Ōtorohanga options. The Hamilton East option also provides greater interconnection capacity than the Ōtorohanga option and, under the higher-demand Growth scenario, defers the need for a further 220/110 kV transformer—a fourth transformer overall—which would otherwise be required by 2048 under the Ōtorohanga option.

² The Ōtorohanga option would be located adjacent to the crossing of the existing 220 kV Huntly–Stratford and 110 kV Hangatiki–Te Awamutu lines, approximately 3 km north of Ōtorohanga town centre.

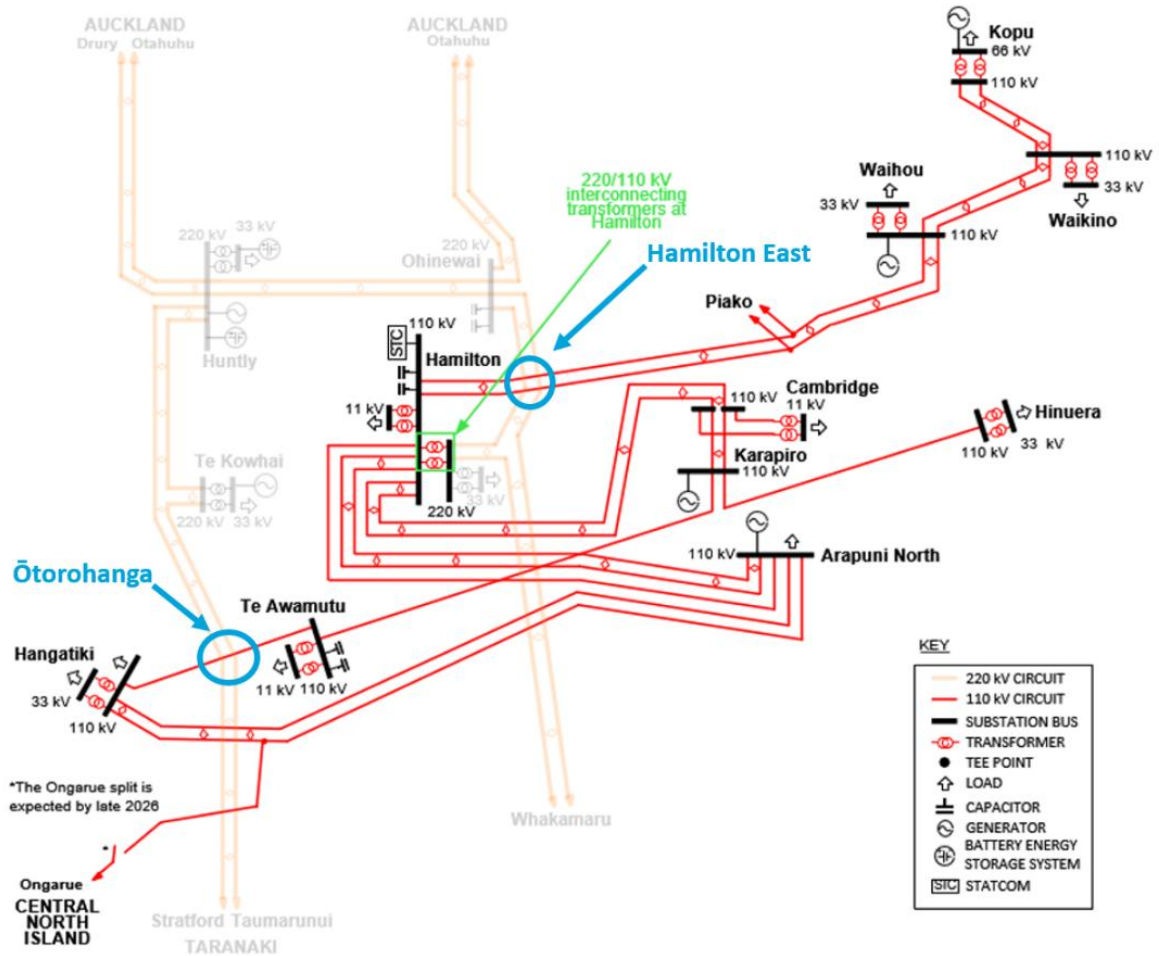


Figure 1: Schematic of the Waikato 110 kV network

No final investment decision has been made, and feedback received through this consultation will be considered before Transpower finalises its investment proposal, supporting analysis and any MCP application. This overview, together with the supporting attachments, provides the detailed need assessment, options assessment, technical and benefit modelling analysis, investment test results and estimated pricing impacts.

3 Purpose and scope of this consultation

This consultation is the next step in Transpower's WRIC MCP process. It follows the earlier longlist consultation in May 2024 and presents the shortlisted options that have been retained for further assessment. We are seeking stakeholder feedback before deciding whether to proceed with submitting an MCP to the Commerce Commission and, if so, which investment option should be included in that application.

The consultation covers the need to increase interconnection capacity between the 220 kV grid backbone and the Waikato 110 kV regional network, the timing of that need, the demand and generation assumptions used in our analysis, the shortlisted options, our preliminary application of the investment test and the potential pricing and customer impacts. The shortlisted options comprise:

- the counterfactual of no new investment,
- the Hamilton East option, which establishes a new 220/110 kV connection east of Hamilton,
- the Ōtorohanga option, which establishes a new 220/110 kV connection near Ōtorohanga.

At this stage, Transpower's preferred option for consultation is Hamilton East. We consider this option best meets the identified need and provides the greatest long-term flexibility for future investment and network development within the Waikato 110 kV network. However, this remains a consultation position rather than a final investment decision. Feedback received through this consultation will be considered before the preferred option and supporting analysis are finalised for any MCP application.

We are particularly interested in feedback on six areas:

- the need for and timing of the proposed investment,
- demand and generation assumptions,
- the shortlisted options,
- the current preference for the Hamilton East option,
- the preliminary investment test results, and
- the proposed approach to pricing and customer impact.

4 Why investment is needed

Investment is needed to maintain reliable supply to the Waikato 110 kV regional network as electricity demand grows. The region is currently supplied from the 220 kV grid backbone through the two existing Hamilton 220/110 kV transformers, supported by local hydro generation at Arapuni and Karapiro.

With forecast load growth, the loss of one Hamilton 220/110 kV transformer during peak demand periods is expected to overload the remaining transformer and increase the risk of supply interruptions. The investment need is therefore not driven by a single customer or single load connection. It reflects the combined effect of regional growth, changing electricity use, and the need to maintain a secure and resilient connection between the Waikato 110 kV network and the 220 kV grid backbone.

These two 220/110 kV transformers at the Hamilton substation are part of the core grid and fall under the N-1 reliability standards. The Grid Reliability Standards³ require us to maintain at least an N-1 level of reliability on the core grid, which means the power system remains in a satisfactory state, without interrupting supply to demand, following the failure of a single relevant grid asset, such as a transmission circuit, transformer or generation unit.

4.1 Regional demand growth

The Waikato region is expected to experience continued electricity demand growth from underlying residential, commercial and industrial demand, together with electrification and new connection activity. Updated demand and generation assumptions show the Waikato 110 kV load is approaching the point where the existing interconnection capacity will no longer provide N-1 reliability during periods of peak demand.

The demand scenarios incorporate confirmed or sufficiently likely step changes, including future load transfers recently identified by Electricity Distribution Businesses (**EDBs**) as part of their counterfactual development pathways. While these assumptions influence the timing of the need and the relative attractiveness of options, they are not the sole drivers of the investment requirement.

Demand uncertainty remains material, particularly around the timing and scale of large industrial electrification loads and new generation or battery developments. The assessment therefore tests the options across a range of Electricity Demand and Generation (**EDGS**)⁴-based scenarios. The EDGS are discussed in detail in Attachment 2.

³ The Grid Reliability Standards are set out in the Electricity Industry Participation Code 2010 and include the N-1 reliability standard for the core grid.

⁴ MBIE prepares an independent set of scenarios called the [Electricity Demand and Generation Scenarios \(EDGS\)](#) that explore potential future electricity demand and the generation capacity required to meet that demand. EDGS have an explicit role in the investment test used for Transpower's proposals under the Transpower Capital Expenditure Input Methodology (Capex IM).

Without timely investment, Transpower would face increasing reliance on operational measures, demand response, generation redispatch and outage restrictions to manage the network, with higher expected unserved energy and reduced resilience during planned and unplanned outages.

5 Options assessed

This section summarises how Transpower moved from the longlist of possible responses to the shortlisted options assessed in detail for this consultation. It then describes the counterfactual and the two retained investment options. The detailed longlist to shortlist assessment is provided in Attachment 1, which also seeks feedback on the choices made and the reasons for them.

5.1 Longlist to shortlist process

The longlist assessment considered a range of ways to increase interconnection capacity, reduce demand on the Waikato 110 kV network, or manage the system operationally. Options were screened using Transpower's standard MCP criteria. These include:

- fit for purpose,
- technical feasibility,
- practical implementation,
- system security,
- good electricity industry practice and
- cost.

Options not progressed generally failed to reliably meet the core N-1 interconnection capacity need, introduced material delivery or constructability risks, or provided insufficient long-term flexibility compared with the retained options. The option of installing an additional 220/110 kV transformer at the existing Hamilton substation was not retained because of significant constructability, delivery and site complexity concerns.

The longlist of options and the selection of the shortlist are detailed in Attachment 1.

5.2 Shortlisted options

The shortlisted options retained for detailed assessment are summarised below. They include the counterfactual against which the investment options are assessed, and two credible options: Hamilton East and Ōtorohanga. The detailed option descriptions, single-line diagrams, screening assessment and cost estimates are provided in the attachments. This overview focuses on outlining the options, the reasons Hamilton East is the preferred option and the matters on which Transpower is seeking stakeholder feedback.

Counterfactual option

No new Transpower investment to increase interconnection capacity into the Waikato 110 kV network, with the existing Hamilton substation remaining in service and operational measures used as needed to manage system security and reliability. We define this counterfactual in accordance with the Capex IM, which states that the counterfactual must be a "feasible and reasonable hypothetical future generation option where no major capex is incurred". This option does not

maintain compliance with the Grid Reliability Standards (GRS) and is not considered good electricity industry practice. It serves as the base case for the economic assessment and is used to quantify the benefits of alternative investment options.

Hamilton East option

A new 220/110 kV connection east of Hamilton, connected to nearby 220 kV and 110 kV circuits, providing additional interconnection capacity into the Waikato 110 kV network close to major current and future load centres. The Hamilton East option involves constructing a new 220/110 kV connection at a greenfield site to the east of Hamilton, near the crossing of the 220 kV Ōhinewai–Whakamaru and 110 kV Hamilton–Piako–Waihou circuits. The option includes a new 220/110 kV transformer, 220kV and 110kV switchyards, and connections to the nearby transmission network, including bonding the Hamilton–Hamilton East 110 kV circuits.

Ōtorohanga option

A new 220/110 kV connection in the Ōtorohanga area, connected to nearby 220 kV and 110 kV circuits, providing an additional southern point of supply into the Waikato 110 kV network. The Ōtorohanga option involves establishing a new 220/110 kV connection at a greenfield site near Ōtorohanga, with loop-in, loop-out connections to the 220 kV Huntly–Stratford A circuit and the 110 kV Hangatiki–Te Awamutu circuit.

5.3 Non-transmission solutions

We identified a range of potential non-transmission solutions (NTS) in the longlist included in Attachment 1.

To ensure potential NTS continue to receive due consideration, we intend to seek information from potential providers on solutions that could help meet the Waikato 110 kV need or defer the need date. This would include considering an NTS allowance as part of any MCP application, enabling Transpower to fund economic NTS without requiring a separate funding application. This consultation includes a Request for Interest (RFI) process. Subject to the responses from that process, we intend to revisit potential economic NTS through a later Request for Proposal (RFP) process.

6 Investment test results

As part of the shortlist assessment, we have applied the investment test to compare the shortlisted options against the counterfactual. The assessment considers the quantified costs and benefits of each option over the assessment period. These include capital costs, operating and maintenance costs, and reliability benefits from reducing expected unserved energy.

The benefits also include deferral benefits from delaying modelled regional projects and terminal values for assets with remaining value at the end of the period.

Table 1: Summary of discounted costs and quantified benefits for the shortlist options⁵

	Option 1 Counterfactual	Option 2 Hamilton East	Option 3 Ōtorohanga
Discounted Capital cost (2026 \$m)	0.0	42.6	40.9
Reliability benefit (2026 \$m)	0.0	13.7	7.2
Modelled projects deferral benefit (2026 \$m)	0.0	41.6	11.1
Maintenance cost benefit (2026 \$m)	0.0	-5.2	-4.9
Terminal value benefit (2026 \$m)	0.0	-2.4	10.4
Total quantified benefits (2026 \$m)	0.0	47.7	23.8
Net quantified benefit (2026 \$m)	0.0	5.1	-17.1

On a scenario-weighted basis, the Hamilton East option has the highest expected net electricity market benefit of the options assessed. It has a positive quantified net benefit relative to the counterfactual of \$5.1 million and a material advantage relative to the Ōtorohanga option of \$22.2 million.

Attachment 3 provides full details on the benefit modelling included in the above summary and in our application of the investment test.

⁵ Future costs and benefits have been calculated out to 2050 and discounted back to present value using a discount rate of 5%. The capital cost figures in this table are discounted values used for the Investment Test and therefore differ from the expected P50 investment cost used for the draft Major Capex Allowance.

7 Preferred option

Based on our preliminary application of the investment test, the preferred option for consultation is Option 2: Hamilton East.

The current expected P50 investment capital cost is estimated at \$47.9 million in real 2026 dollars. This differs from the discounted capital cost shown in the investment test summary table because the investment test values future costs and benefits on a discounted present value basis. Commissioning would be targeted to align with the need date, currently identified as winter 2030.

Hamilton East is the preferred option because it has the highest expected net electricity market benefit of the shortlisted options and provides a positive quantified net benefit relative to the counterfactual. It provides additional 220/110 kV interconnection capacity close to the main Hamilton load centre and emerging growth areas east and north-east of Hamilton. This reduces reliance on the existing Hamilton connection, improves supply security into the Waikato 110 kV network and provides a flexible development platform for future regional growth.

The option adds resilience and operational flexibility by creating a new supply point into the Waikato 110 kV network. Hamilton East also helps manage wider Waikato 110 kV constraints, including the Valley Spur⁶ voltage issue when combined with the modelled Hamilton–Morrinsville–Waihou special protection scheme. This means the option contributes to both the immediate interconnection capacity need and the broader operation of the regional 110 kV network.

Ōtorohanga is a credible shortlisted option because it would raise the Waikato 110 kV interconnection capacity enough to enable N-1 reliability to be maintained throughout the calculation period in most demand scenarios. However, it provides significantly lower expected net electricity market benefits than Hamilton East. Under the high demand scenario (EDGS Growth scenario), it would also require an additional fourth interconnecting transformer by 2048.

On the current assessment, Hamilton East provides the stronger overall balance of quantified benefits, resilience, operational flexibility, and future optionality.

⁶ The **Valley Spur** is the 110 kV double-circuit transmission corridor from Hamilton to the Thames Valley area, connecting the Piako, Waihou, Waikino and Kopu substations, which supply Powerco's Waikato distribution network.

8 Key assumptions

The investment test uses EDGS based demand scenarios⁷. The Environmental scenario is treated as the central case, while the Growth and Constraint scenarios test higher and lower-demand futures. Other key modelling inputs and assumptions that influence the investment test outcome include:

- demand projections that incorporate confirmed or sufficiently likely changes in GXP and regional loads.
- EDB network development plans and any resulting load shifting.
- Assumed minimum combined contribution of 150 MW from Arapuni and Karapiro hydro generation during relevant regional peak demand periods.
- Need dates for modelled projects are taken as identified by power system modelling and can vary by scenario and as impacted by each investment option.
- Capital cost estimates for both investment options and modelled projects. All cost estimates are at Class 4 standard⁸.

The detailed assumptions, sensitivities, and supporting modelling evidence are provided in Attachments 2 and 3.

⁷ See Attachment 2 for further information on EDGS scenarios

⁸ As defined by AACE (Association for the Advancement of Cost Engineering)

9 Major Capex Allowance

If Transpower proceeds with an MCP following this consultation, the Waikato Regional Interconnection Capacity MCP would seek Commerce Commission approval to recover the cost of the proposed investment. If approved, the associated revenue would be recovered through transmission charges after the relevant assets are commissioned.

The expected P50 investment cost is estimated at \$47.9 million in real 2026 dollars. Following this consultation, Transpower will consider stakeholder feedback, confirm the proposed investment, complete detailed design and Class 3 cost estimates, and prepare any MCP application.

Transpower will seek an allowance from the Commerce Commission to recover capital costs associated with 'interconnection' investments; this is referred to as the Major Capex Allowance (MCA). The estimated MCA for our proposed investment is provided in the table below.

Table 2: Draft Major Capex Allowance

	Expected P50 cost (real 2026 \$m)	Draft MCA (nominal \$m)
Transpower Capital Project Cost	\$47.9m	\$55.5m

The draft MCA differs from the expected P50 investment cost because it is expressed in nominal dollars and includes inflation and interest during construction.

If our preferred option for consultation remains unchanged following this consultation, and the Commerce Commission approves our subsequent investment proposal, the cost of the investment will be recovered through interconnection transmission charges. The Commerce Commission determines the revenue Transpower can recover from its customers, while the Transmission Pricing Methodology (TPM) determines how this revenue is allocated among Transpower's customers in each pricing year.

10 Pricing and customer impact

Although we are not yet consulting on pricing allocations, Attachment 4 provides a high-level estimate of the potential pricing impacts of the preferred option. If we proceed with submitting an MCP to the Commerce Commission following this consultation, we will formally consult on the benefit-based investment (BBI) starting allocations for the investment.

The primary need for the investment is to maintain reliable supply and meet the relevant Grid Reliability Standards for the core grid. Transpower's preliminary view is that the WRIC investment should be treated as a Reliability BBI under the TPM Standard Method. This view remains subject to consultation feedback and to any later TPM process required before charges commence.

10.1 Pricing treatment

The current preferred option for consultation is expected to comprise a single WRIC BBI. This is because the investment is driven by one primary need: increasing interconnection capacity into the Waikato 110 kV network. Our preliminary view is that the beneficiaries are the offtake customers connected to the Waikato 110 kV network, treated as a single regional customer group.

For a Reliability BBI using a peak intra-regional allocator⁹, indicative intra-regional allocations are based on mean historical coincident peak offtake. This would be calculated from the 100 highest peak offtake trading periods in each relevant capacity year, averaged over five years.

The detailed indicative pricing impacts and allocation assumptions are provided in Attachment 4. The indicative pricing information in this consultation is intended to support stakeholder engagement and is not the proposed or final starting allocation. If an MCP is approved by the Commerce Commission and Transpower makes a final investment decision, Transpower expects to undertake a TPM consultation on the proposed starting allocations before benefit-based charges commence.

⁹ [Part 12—Transport | Electricity Authority](#)

11 Consultation

11.1 Consultation information provided

The information provided for this consultation comprises:

- This shortlist consultation overview paper.
- Attachment 1 – Need Assessment and Shortlist of Options.
- Attachment 2 – Demand and Generation Scenarios.
- Attachment 3 – Benefits Modelling and Investment Test.
- Attachment 4 – Indicative Pricing Allocations.
- Attachment 5 – Non-Transmission Solutions.

The attachments contain information and questions to guide feedback. The questions are also summarised in the final section of this document.

11.2 Consultation process

We seek and welcome feedback on this consultation through written submissions. The submission period is from 21 October 2026 to 2 December 2026. Please send your submissions or queries to grid.investments@transpower.co.nz. We will acknowledge submissions by return email.

Submissions should clearly identify the parts of the consultation material being commented on and include any supporting evidence, data, or alternative assumptions that Transpower should consider.

Once the consultation period ends, we will make all submissions available on our [Waikato Regional Interconnection Capacity Project Page](#). Any contact details you have included in your document will be included. In addition, we will share these submissions with the Commission as part of our discussions on this project. Please note that we do not intend to share individual RFI responses publicly or with the Commerce Commission. The only information we may disclose is the overall level of participation in the RFI. All response details will remain confidential.

If you do not want us to publish or share your contact details, or you want any parts of your submission to be kept confidential, then please provide us with a version of your submission with the confidential elements redacted, and we will publish that version. Any relevant confidential information will need to be shared with the Commerce Commission if this investigation results in an MCP. Transpower is also subject to the Official Information Act.

12 Next steps

This shortlist consultation is a significant step in the regulated process for proposing major investments in New Zealand's electricity transmission network. The next steps include:

- Considering the feedback and information received in submissions.
- Refining our application of the investment test, including taking account of consultation feedback and obtaining more detailed cost estimates.
- If the preferred option remains supported, Transpower expects to submit an MCP to the Commerce Commission seeking approval to recover the costs of the investment.

The Commerce Commission's review and any subsequent approval would determine whether the project proceeds to detailed delivery planning and any later TPM allocation consultation before charges commence.

13 Feedback

The attachments include specific questions to guide your feedback. You are not obliged to answer all or any of these questions, and you are welcome to raise other relevant issues.

Attachment 1 discusses the need for investment, the options considered to respond to that need, and the shortlisting of those options.

Attachment 1 asks the following questions:

- Q1. Do you agree that investment is needed to increase interconnection capacity into the Waikato 110 kV network?
- Q2. Do you agree with the timing of the identified need?
- Q3. Are you aware of any customer, generation, demand response, battery storage, or network developments that could materially affect the timing of the need, or defer, reduce, or avoid the need for investment?
- Q4. Do you agree with the shortlisted options and the reasons for why other options have not been progressed?

Attachment 2 outlines the generation and demand scenarios we are using for our analysis.

Attachment 2 asks the following questions:

- Q5. Do you consider our demand and generation assumptions appropriate for this investigation?
- Q6. Are you aware of any additional information that could materially affect our electricity demand forecast or generation assumptions?
- Q7. Do you agree with our proposal to use the Assumptions Book v3.0¹⁰ variations as the basis for the investigation's generation scenarios?

Attachment 3 outlines our approach to modelling the benefits of options and our preliminary application of the investment test.

Attachment 3 asks the following questions:

- Q8. Do you consider our proposed weighting of the market development scenarios to be appropriate?
- Q9. Do you consider our use of a calculation period of 2030–2049 and a standard discount rate of 5% to be appropriate?

¹⁰ [Assumptions book](#) | [Transpower](#)

- Q10. Do you have feedback on the preliminary investment test results?
- Q11. Are there any costs, benefits, modelled projects, or sensitivities that should be reviewed or given greater weight?
- Q12. Do you agree with Transpower's current view that Hamilton East is the preferred option?
- Q13. Do you agree that our preferred option remains robust under sensitivity analysis?
- Q14. Are you aware of any other information that could materially affect the option ranking?

Attachment 4 provides an indicative range of starting BBI customer allocations for the preferred option. These indicative ranges are included to support stakeholder engagement and are not the proposed or final starting allocations.

Attachment 4 asks the following questions:

- Q15. Do you agree that WRIC MCP should be treated as a Reliability BBI?
- Q16. Do you agree with the proposed Waikato 110 kV modelled region and regional demand group?
- Q17. Do you agree that WRIC should be treated as a Peak BBI, and with the use of mean historical coincident peak offtake to calculate indicative IRAs?
- Q18. Are there any customers, GXPs, or data-related issues that may materially influence the proposed starting allocations and should be taken into account?

Attachment 5 does not include specific consultation questions. Instead, it seeks RFI-style input from potential providers on NTS that could help meet or defer the Waikato 110 kV need or reduce the scale of any required transmission investment.

We also invite broader feedback on our proposed approach to identifying, assessing, and potentially procuring NTS for this MCP, including any practical opportunities or constraints we should consider.