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Transpower

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Tēnā koutou,



RESPONSE TO SUBMISSION ON TRANSPOWER'S TARARUA ENABLING RENEWABLES MAJOR CAPEX PROPOSAL – LONG LIST CONSULTATION

Unison Networks Limited (Unison) and Centralines Limited (Centralines) are consumer-owned electricity distribution businesses serving communities in Hawke's Bay, Taupō, Rotorua, and Central Hawke's Bay. We welcome the opportunity to comment on Transpower's Tararua Enabling Renewables Major Capex Proposal – Long List Consultation.

As consumer-owned entities, we operate in the best interests of the communities we serve. Guided by our vision, and values, we strive to deliver economic benefits to both our customers and community shareholders, while championing a sustainable energy future. We are committed to maintaining the right balance between keeping electricity affordable and making strategic investments that secure the long-term reliability and resilience of our network. In all aspects of our operations, we place strong emphasis on meeting industry compliance requirements, ensuring we uphold all relevant standards. This approach not only supports New Zealand's transition to new energy solutions but also enables our communities to access cleaner, smarter, and more flexible energy options, now and for generations to come.

Executive Summary

Unison supports a staged development pathway that prioritises targeted 110 kV upgrades, protection enhancements, and non-transmission solutions (NTS) in the near term, while retaining and actively evaluating the eastern 220 kV pathway as a future, trigger-based option.

This is not simply a regional network upgrade. It is a system architecture decision with implications for:

- large-scale renewable generation;
- Hawke's Bay Security of Supply or Resilience;
- North Island transmission resilience; and
- national route diversity.

An eastern 220 kV corridor would establish a north–south transmission pathway that bypasses the Central Plateau volcanic region, delivering a material resilience benefit through improved geographic diversity and reduced exposure to shared system risks. These benefits should be robustly accounted for in the assessment.

Given the anticipatory nature of the investment, the Investment Test should be applied on a whole-of-system, pathway basis, capturing not only regional capacity benefits but also national resilience, transfer capability, and long-term system efficiency. These resilience risks have been identified and explored by Transpower previously, reinforcing that this is a recognised system-level issue rather than a network-specific concern.

Any resulting cost allocation should reflect the full beneficiary base, rather than inappropriately allocating costs to existing load customers for investments that are materially enabling future generation and system benefits.

1. Introduction

We support the objective of enabling renewable generation efficiently and improving transmission capability across the Tararua–Wairarapa region. This is not a conventional constraint-driven upgrade. Rather, it is an investigation into how transmission investment can unlock a substantial pipeline of renewable generation and support broader electrification outcomes.

We recognise that Transpower is testing an anticipatory investment model, moving from a reactive approach, where upgrades follow committed generation, to a more enabling approach that lowers connection barriers and supports future development.

From our perspective, the key issue is not which individual asset should be selected, but how to define a development pathway that is:

- technically robust;
- resilient under extreme events;
- efficient over time; and
- fair to consumers.

2. Overall approach

Consistent with the Executive Summary, our approach is a staged development pathway: progressing least-regrets 110 kV and non-transmission solutions in the near term, while retaining the eastern 220 kV corridor as a future, trigger-based option.

This approach reflects the need to balance near-term deliverability with preserving efficient long-term system outcomes under uncertainty.

This is not a “110 kV only” pathway, nor a “build 220 kV now” approach. Rather, it is to progress least-regrets, stageable investments first, while retaining and actively evaluating the eastern 220 kV option as a future trigger-based pathway.

That is the most prudent response to the issue Transpower is testing: how much future renewable generation and resilience value transmission should proactively enable, and on what basis.

3. Framing the investment need properly

In particular, the current framing does not sufficiently reflect national security considerations or the wider role of transmission in providing system-wide resilience and geographic diversity.

As presented, the consultation primarily emphasises the need to unlock regional renewable generation and relieve existing transmission constraints. Those are clearly important drivers, and they are reflected in Transpower's description of the eastern 110 kV network as lower capacity, constrained under some operating conditions, and already reliant on protection schemes and operational responses to remain within limits.

We also note that customers on the Centralines network already experience export constraints under some network configurations, reinforcing that transmission capacity is already a limiting factor.

We consider that, in parts of the region, the 110 kV network is already approaching practical hosting limits for generation, particularly around Waipawa and Dannevirke, and is unlikely to efficiently accommodate the scale of proposed development without material reinforcement.

However, in our view the investment need should be framed more broadly around three interconnected objectives:

- Enabling large-scale renewable generation in Tararua, Wairarapa and potentially further north;
- Improving regional and inter-regional transmission capability, including the ability to move power efficiently under a wider range of system conditions; and
- Strengthening national security and system resilience, particularly through greater route diversity and reduced exposure to shared failure modes.

That broader framing matters because the proposal has system-level implications for the lower North Island and wider grid development.

In this context, transmission capacity is likely to become the binding constraint on future renewable development in the region if not proactively addressed.

4. Technical position

4.1 Prioritise 110 kV and NTS in the near term

We support targeted, modular investments that address known constraints, including:

- reinforcement of constrained 110 kV corridors;
- transformer and cable upgrades;
- protection upgrades for inverter-based resources; and
- NTS, where these can defer or reduce augmentation.

These solutions are:

- lower cost;
- faster to deliver; and
- more easily staged.

4.2 Retain the eastern 220 kV pathway

We consider there is a credible case for progressing the eastern 220 kV pathway as a strategic option, subject to appropriate staging and economic triggers.

A step change in capacity would enable materially larger volumes of generation (potentially hundreds of megawatts), which is unlikely to be achieved efficiently through incremental 110 kV reinforcement alone.

The eastern 220 kV pathway should therefore be retained and progressed as a strategic option. Its value lies in enabling a step-change in capacity that is unlikely to be delivered efficiently through incremental 110 kV reinforcement alone.

5. Hawke's Bay security and resilience

A key consideration that should be given greater weight in the investigation is Hawke's Bay security of supply.

From Unison's experience, including during Cyclone Gabrielle, supply into Hawke's Bay is more vulnerable than a high-level schematic might suggest. Critical 220 kV assets from Wairakei into Hawke's Bay are not fully independent in practice. In particular, the WRK–RDF and WRK–WHI 220 kV circuits share structures in places, which creates exposure to common-mode failure under major events.

In that scenario, the 110 kV WPW–FHL and TUI–FHL supplies are constrained, limiting their ability to provide full back-up support. This is not just a theoretical issue. It affects the practical security of supply to Redclyffe, Whakatu and Fernhill, and constrains the ability to respond flexibly under contingency conditions.

During Cyclone Gabrielle, limited transmission independence meant supply relied on constrained 110 kV pathways and local hydro assets (including Tuai) to maintain service while repairs were undertaken. A fully rated transmission pathway from the south would have materially reduced reliance on these operational measures and improved overall system resilience.

While the likelihood of a major transmission failure may be low, the consequences are significant. A sustained outage affecting Hawke's Bay could result in a large population being without supply for an extended period, creating a material welfare and civil defence risk. This reinforces the importance of assessing not only expected reliability outcomes, but also the consequences of low-probability, high-impact events when evaluating transmission resilience.

This is important for two reasons.

First, a stronger southern pathway supplying into Hawke's Bay would materially improve contingency response capability and reduce reliance on operational workarounds.

Second, it highlights why the assessment should value not only current capacity needs, but also the future security benefits of strengthened or additional circuits from the south into Hawke's Bay.

In practical terms, Unison considers increased 220 kV transfer capability linking the WRK and BPE corridors to be the most beneficial configuration for Hawke's Bay security and system flexibility.

In our view, options involving upgraded or new circuits from the south should therefore be assessed not only for generation enablement, but also for their role in:

- reducing exposure to tower failures and landslip-related outages;
- improving the independence of supply paths; and
- strengthening Hawke's Bay's ability to withstand and recover from major events.

6. National security, route diversity and volcanic risk

We also consider the investigation should give more explicit attention to national security and route diversity. We note that consideration of an eastern transmission pathway originates from earlier National Security assessments, where eastern, western, and central 220 kV development options were evaluated as part of improving system resilience.

At present, there is no equivalent eastern 220 kV north–south backbone providing the same level of diversification as the western and central pathways. This matters because a sizeable portion of the North Island transmission system remains exposed to geographically concentrated risks, including those associated with the Central Plateau volcanic region.

A major benefit of an eastern 220 kV development is that it could provide a north–south route that bypasses the Central Plateau volcanic region. In our view, which is a material strategic benefit.

A geographically distinct eastern pathway would:

- reduce exposure to geographically concentrated disruption risks;
- improve diversity of bulk transmission supply;
- strengthen survivability under low-probability, high-consequence events;
- improve restoration outcomes following major corridor disruptions.

This is not a marginal or secondary effect. It is a structural resilience benefit for the wider grid.

That point should be systematically reflected into both the framing of the investment need and the option assessment. Otherwise, there is a risk the evaluation underweights benefits that do not sit neatly within a narrow regional or short-term cost-benefit lens.

7. Whole-of-system economic assessment

We endorse the use of the Investment Test as the primary framework for evaluating options. However, we consider it should be applied in a way that is appropriate for enabling investment, rather than relying on the standard approach used for reactive network upgrades.

Transpower's consultation acknowledges that this is an enabling investment, that multiple development pathways may be optimal depending on the extent of generation uptake, and that more ambitious options, including coordinated 220 kV development, may only be economic under certain assumptions.

In that context, the Investment Test should assess integrated development pathways on a whole-of-system basis, rather than evaluating options in isolation or from a narrow regional perspective.

The assessment should therefore:

- compare integrated pathways, not just standalone assets;
- test sequencing (for example, staged 110 kV upgrades followed by 220 kV development if triggers are met);
- recognise the value of staging and deferral under uncertainty;
- reflect the risk of repeated incremental upgrades becoming less efficient over time;
- assess benefits at a whole-of-North-Island level;
- incorporate regional and inter-regional transfer capability;
- account for resilience and security under major contingencies;
- reflect route diversity and exposure to common-mode risks; and
- consider long-run network efficiency under large-scale renewable development.

This is critical because a narrow regional assessment may bias outcomes toward either incremental options aligned with near-term certainty or larger investments based on optimistic long-term assumptions.

A well-designed approach should therefore be neutral across pathways, assess a range of credible scenarios, and reflect both system-wide benefits and uncertainty.

In reducing the long list, we consider Transpower should clearly include the following criteria:

- system resilience and national security;
- existing and emerging generation constraints;
- Hawke's Bay-specific vulnerability (including shared structure risk);
- route diversity and common-mode risk; and
- contribution to whole-of-system transfer capability and flexibility.

8. Pricing and cost allocation

Our support for investment is conditional on strong cost-allocation discipline.

The core pricing issue is straightforward. Because projects are being assessed as anticipatory investment, there is a risk that investment occurs before the full benefits have

materialised, particularly where those benefits are expected to be delivered by future generators.

Transpower's consultation notes that any approved investment through this process would be treated as a benefit-based investment under the TPM, with costs recovered through benefit-based charges (BBCs), while also noting that alternative funding arrangements may be considered where appropriate.

Our pricing position is therefore:

For staged 110 kV and related investments

Support should be given where:

- benefits are robustly demonstrated;
- expenditure is staged to reflect actual need;
- cost allocation reflects the beneficiaries; and
- existing consumers are protected from paying too early for materially anticipatory capacity.

For any future 220 kV regional option

Support should be conditional on:

- credible evidence of generation uptake and timing;
- clear demonstration that the larger investment is more efficient than repeated incremental upgrades;
- explicit recognition of resilience, diversity, and whole-of-system benefits; and
- cost allocation that reflects the broader beneficiary base, rather than simply socialising costs to existing regional load.

This is particularly important if the Investment Test is widened to include whole-of-system benefits. If benefits extend beyond the local region, for example, through national resilience, route diversity or increased North Island transfer capability, then the cost allocation framework must also reflect that wider beneficiary base.

Consumers should benefit from efficient transmission development over time. They should not, however, be asked to underwrite speculative future generation or system benefits that are not matched by fair allocation outcomes.

9. Additional matters for the investigation

We also encourage Transpower to give further attention to the following matters in the next phase of the investigation:

9.1 Connection configuration in Hawke's Bay

The assessment would benefit from more explicit evaluation of the relative merits of potential connection and interconnection points, including:

- Fernhill;
- Whakatu;
- Redclyffe; and
- Waipawa.

These configuration choices materially affect:

- security outcomes;
- the extent of support to the Unison and Centralines networks; and
- the overall value and staging of any upgraded southern pathway.

A 220 kV connection at Waipawa could provide a flexible staging option, delivering early benefits through enhanced 110 kV support while deferring the scope and cost of a full build-out.

9.2 Distribution and flexible alternatives

Transpower's consultation appropriately recognises that NTS may defer or reduce network investment. In our view, the next phase should continue to assess transmission, distribution and flexibility options using consistent economic principles, so that the least-cost outcome is selected regardless of whether it sits in transmission, distribution, storage, or flexible demand.

9.3 Demand assumptions and forecasting

Unison already provides load forecasts to Transpower and would welcome the opportunity to workshop forecast assumptions, including the development of credible high and low demand scenarios to support robust sensitivity testing.

This is particularly important given the sensitivity of the Investment Test to demand assumptions, timing of electrification, and uncertainty in future load growth.

10. Conclusion

Unison supports a staged and flexible development pathway that enables near-term generation while preserving efficient long-term options.

Targeted 110 kV upgrades, protection enhancements, and non-transmission solutions represent the most proportionate response to current constraints.

At the same time, the eastern 220 kV corridor should remain under active development as a strategic option, given its potential to deliver material capacity and system-wide benefits as generation scales.

We consider that the Investment Test should assess integrated development pathways and reflect whole-of-system benefits.

Applying this approach will support efficient, staged investment decisions that are robust to uncertainty and aligned with long-term consumer outcomes.

Ngā mihi nui,

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