TRANSPOWER

*Keeping the energy flowing*

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By email regulation.branch@comcom.govt.nz

# Fit for purpose regulation

Dear Andy,

Transpower welcomes the opportunity to respond to the Commerce Commission's (the Commission's) open letter 'ensuring our energy and airports regulation is fit for purpose' dated 29 April 2021.

As the Commission states, Part 4 regulations should achieve the following:

- support the transition to a low carbon economy, but in a way that does not compromise consumers receiving the energy services they demand, across reliable and resilient networks;
- encourage innovative approaches to delivering least-cost energy services;
- continues to provide a level of regulatory certainty and predictability conducive to efficient investment; and
- recognise wider regulatory systems and competitive energy markets, and the role of our regulation within them.

We believe that these outcomes are consistent with delivering long-term benefits for consumers.

We are responsible for the development and operation of New Zealand's electricity transmission system. A key part of our strategy, alongside operating a safe, efficient and reliable grid, is to enable the long-term decarbonisation of New Zealand's economy.

We explain our strategy in more detail on our website and in various other publications:

- Our blueprint for how New Zealand's energy systems can lead to a decarbonised economy is set out in the March 2020 report, Whakamana i Te Mauri Hiko – Empowering our Energy Future. This paper explores how demand for electricity and the makeup of generation might change as New Zealand decarbonises. It considers the implications for the planning of the grid and the sector's ability to deliver a 55-70% increase in demand for electricity over the next 30 years.

- In our Electrification Roadmap we focus on policy options to accelerate emissions reductions in the transport and process heat sectors.
- Our submission to the Climate Change Commission (CCC) sets out the role we believe the grid will need to play in order to meet the CCC's advice.

We are focused on improving how we enable new connections for grid scale renewable generation and meet growing demand associated with transport and industry electrification.

We have started our Net Zero Grid Pathways (NZGP) project which covers our plans and investments on the backbone of Aotearoa's grid. As part of this project we are seeking input from industry to help determine what specific grid investments may be required, and by when. We are also working hard to ensure the electricity transmission network enables the ongoing transformation of electricity distribution networks from the anticipated addition of distributed energy resources. These developments are set to change how electricity systems grow and operate, and the way in which consumers of all sizes will interact with their energy systems.

We consider that the current Part 4 regime has delivered consumers a reliable, safe and efficient electrical grid. Transpower has responded to the financial and reputational incentives created by the Commission and we have worked hard to deliver higher quality services at least cost. However, decarbonising the New Zealand economy requires a regulatory regime that more explicitly reflects this objective. Regulators in overseas jurisdictions, for example in Great Britain, have built in net zero targets into their regulatory methodologies and Australia's Energy Security Board (ESB) is investigating options to ensure the National Electricity Market delivers a low emissions economy.

While the Commission operates with different powers to those overseas, we consider that a similar shift to incorporating emissions reduction in the application of Part 4 regulation is required. This does not require a revolution for the regulatory framework, but we think incremental improvements to the current regime are important as they would help enable decarbonisation and ensure the grid will remain resilient in a future that will be increasingly more reliant on electricity supplied via the grid.

## Input Methodologies review

We agree with the Commission's view on what the key issues are for the energy sector. We consider the next Input Methodologies (IMs) review to be of strategic importance, as it could be setting the scene for how Part 4 regulation supports arguably this generation's biggest challenge – decarbonising New Zealand's economy.

There are two IM determinations that apply to Transpower: The Capital Expenditure IM (**Capex IM)** and the **Transpower IM**:

- The Transpower IM defines the building blocks that make up Transpower's regulated revenue.
- The Capex IM comprises the rules and processes for approving capital expenditure (Transpower's applications and the Commission's assessments), including the Investment Test that we must apply to our investments over $20 million in order to recover costs through the Transmission Pricing Methodology (TPM).

The current framework has built in flexibility and provides strong incentives for us to deliver efficient and prudent investments. However, we think incremental improvements can be

made to the framework to ensure that we are able to identify and act on opportunities for the grid to enable decarbonisation of the economy and to ensure the grid's resilience matches consumers' expectations. These incremental improvements include:

- providing greater certainty on the benefits, including the value of these benefits, and assumptions, that the Commission will consider in relation to decarbonisation ('Scope of the investment test');
- ensuring that the regulatory approval process for major projects is proportionate and timely ('Timely regulatory approvals');
- ensuring that we are funded to understand what is required to ensure our assets are resilient to climate change and a future where a greater proportion of energy is delivered via the grid ('Resilience');
- introducing incentives to ensure the industry consider innovative solutions for environmental sustainability ('Sustainability'); and
- incentivising innovative services and approaches across the industry to foster the energy transition ('Innovation').

The Commission last reviewed the Capex IM in 2018 – following the usual seven year cycle the next statutory review would not be required before 2025. However, we consider that the Capex IM review should be brought forward to align it with the review timeline of the other energy IMs and our own submission for expenditure during the 2025 – 2029 period (RCP4). If it is not, then any IM amendments relevant to base capex proposals could not be applied until 2030 (start of RCP5). Any major and listed capex projects would continue to be approved under the existing rules until 2025.

In Appendix A, we summarise our initial view on high-level issues. As part of the Commission's consultation on the IMs, we will undertake a more detailed review, and we will submit our analysis and proposals to the Commission.

## Targeted Information Disclosure review

We also appreciate the Commission's intent to undertake a targeted review of the Information Disclosure (ID) regime. Whilst we consider it has a lower priority than an IMs review, we note Transpower's ID determination has not been reviewed since inception and has some aspects that are outdated and errors that should be corrected.

It would be helpful if the Commission outlined its respective plans in more detail, including the timelines it intends to follow and the scope of the targeted review.

We would appreciate the opportunity to discuss this submission with the Commission at any time. Please do not hesitate to contact me (joel.cook@transpower.co.nz).

Kind regards,

Joel Cook

**Head of Regulation**

# Appendix A

## Scope of the Investment Test

Reasons why we consider that the Commission should review the Capex IM Investment Test include:

- The use of energy demand and generation scenarios that are (potentially significantly) different from MBIE's Energy Demand and Generation Scenarios (EDGSs).
- Wider decarbonisation benefits from demand side fuel substitutions. These are not captured in the estimate of value of lost load.
- A starting discount rate that reflects current financing costs. The Investment Test specifies 7% as the discount rate, this was set in 2012. Financing costs, including the market participants' view on long term financing, have come down significantly since then.
- A social discount rate for social benefits (such as the avoidance of carbon emissions). We consider that it is appropriate to use a social discount rate, rather than a financial one, for some consumer benefits or costs.

The Capex IM Investment Test requires us to undertake a cost-benefit analysis to demonstrate our major capex proposals (and other proposed investment of greater than $20 million) yield net electricity market benefits.

This process is vitally important in an investment environment that has high levels of uncertainty. We investigate and make investment proposals to the Commission on long-lived investments that will serve transmission consumers for decades to come. It is therefore essential that our proposals reflect plausible forecast future demand scenarios on the grid.

We have not tested the full extent of the existing flexibility in the Investment Test with the Commission. Our NZGP project will start to test this flexibility, however it would be beneficial if the Capex IM review delivered greater clarity around what the Commission will consider within the Investment Test's current boundaries.

### *Scenarios*

Whilst the Capex IM requires scenario analysis in support of the Investment Test, the use of energy demand and generation scenarios is limited to those published by the Ministry of Business, Innovation and Employment (MBIE), EDGS, or reasonable variations. This has worked well during our recent period of relatively flat demand growth with a comparatively high degree of certainty. However, the EDGS have not been updated since 2019.

As the Zero Carbon Bill had not passed at the time of the last update, the EDGS do not align to a net zero carbon future which we consider fundamental as a basis for proposing, and the Commission approving, investments that enable decarbonisation. In our February 2020 Accelerating Renewable Energy and Energy Efficiency submission to MBIE we elaborate further on the extent to which the EDGS should be improved (Section 10, Questions 10.7 and 10.8), with the primary change being to update the underlying scenario drivers annually.

We are working to develop scenarios as part of our NZGP project.[1] We recently (May 2021) launched a consultation seeking additional feedback from all generation investors on the supply side generation scenarios. We are specifically seeking input on how to prioritise potential new wind and solar generation investment. Because of the similar costs between the various potential wind and solar projects in New Zealand, it is difficult to select regions that we should prioritise. We are hopeful that this information will help us align new generation forecasts with market participant preferences and thereby create a competitive generation investment market. Our EDGS variations are likely to be significant variations from the published EDGS and we trust the Commission appreciate the need for such variations.

We cannot overstate the importance of robust scenarios of future generation and demand. These scenarios are vital in order for us to plan our investments to enable decarbonsiation, and for the Commission and stakeholders to have confidence that our investment decisions are prudent and efficient. We suggest the Commission reviews the Capex IM with a view to clarifying the requirements for the scenarios and how it will consider alternative scenarios to EDGS.

### *Demand side decarbonisation benefits*

The Investment Test takes account for the impact of carbon emissions on the supply side by allowing us to include the cost of carbon emissions from generation in our cost-benefit analysis. However, the wider benefits of decarbonisation from demand side fuel substitution, for instance, are not included. We consider that the Investment Test should allow us to factor in benefits arising from avoided carbon emissions, including those arising to future generations.[2]

The Commission would not be alone in considering this. Ofgem, the Great Britain energy regulator already requires networks to consider societal benefits in their options analysis; and the Australian ESB is currently consulting on whether wider economic benefits should be included in the Australian version of the Investment Test:

> *"Governments also may value a range of benefits that are not currently captured by either the ISP or the RIT-T. These benefits may include boosting local economies or delivering additional employment opportunities in rural communities. These wider economic benefits could be captured in a broader cost-benefit test for actionable ISP [Integrated System Plan] projects to guide the respective contributions of tax-payers and electricity consumers."*[3]

### *Discount rates*

The Investment Test specifies 7% as the discount rate to use in our analyses. This rate was set in 2012 and financing costs, including views on long term financing, have come down significantly since then. While the Investment Test does allow alternative discount rates to be

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[1] Net Zero Grid Pathways Latest Updates | Transpower

[2] Such benefits might be considered externalities to the electricity market (in that they do not directly affect the delivered cost of electricity to consumers), but their inclusion would assist align our decision making with New Zealand's decarbonisation goals.

[3] ESB. Post 2025 Market Design: Options – A paper for consultation – Part A, April 2021, page 79.

used, we consider that updating the discount rate, and/or linking it to an independent long-term discount rate is appropriate.

Further, we note that the 7% figure was primarily chosen as being appropriate for discounting the cost of transmission options, yet it is also applied to all benefits identified, even those that may accrue decades out. Whilst this may be appropriate for some benefits (those relating directly to electricity cost), it is not for social benefits, such as avoided carbon emissions, as discussed above. We consider that the Capex IM should allow for a different discount rate for social benefits.

## Timely regulatory approvals

We propose the Commission considers the following as part of its IMs review:

- Whether the current MCP process is proportionate to the size and impact of all projects over $20m. The reasons for MCPs and their size can vary significantly, however the same process needs to be followed.
- The interactions between the regulatory funding mechanisms for major capex (growth expenditure > $20 million) and base capex growth expenditure (<$20 million).
- Whether the MCP staging mechanism, as introduced during last Capex IM review, is fit-for-purpose and provides scope to increase the speed of regulatory funding approvals.

As we outline in more detail in our March 2021 submission to the Climate Change Commission, the pace of investment decision-making must increase significantly if New Zealand is to hit its climate change targets.

We expect that we will have to build new connections to supply customers and upgrade our existing connections as customers increase their uptake of electricity. To supply this power, we will need to connect new generation, both from existing players and new entrants employing new generation and storage technologies. To ensure that the power from these new generators can make its way to consumers across the country, we will need to make upgrades to the interconnected grid. This may involve upgrades to existing lines and substations or in some cases may involve building entirely new assets.

To increase our pace of delivery, we will need to make decisions and commit to investments in circumstances where, in the last two decades, we might have waited for better information. We believe we are now in, or close to, a world where the risks of not investing early enough to enable decarbonisation outweighs the risks of investing ahead of need.

Many of these investments would have to be funded from major capex. The regulatory approval process for major capex projects (MCPs) is long and has many hurdles, both regarding our application process and the Commission's assessment.

Appropriate hurdles need to be in place for our stakeholders to contribute and the Commission to ensure that, based on available information, our proposed investments deliver long-term benefits for consumers. We are not advocating that appropriate hurdles should be removed; however, the assessment and consultation process should be proportionate to the value and impact of the proposed projects.

The Capex IM specifies a $20 million threshold to distinguish the need for MCPs. This has not been an issue during our recent period of relatively flat demand growth, with just a few MCP applications to the Commission. We are, however, expecting the number of MCP applications to increase and suggest that consideration be given to increasing the monetary threshold for MCP's and to reconsider the interactions between the regulatory funding mechanisms for major capex and base capex growth expenditure.

Whilst Transpower recognises the need to enable new transmission demand and generation connections, we are aware that "enable" suggests building ahead of need and without the certainty those connections will be built.

We are considering options for managing such risk, including how staging investments could help and how we can advance our long-lead time projects to match the generation build lead times. Unless these are closely aligned there is a risk that new renewable generation investments are delayed until transmission constraints are removed.

The Commission introduced the opportunity for Transpower to 'stage' projects. Staging has the potential to be a flexible tool allowing Transpower and the Commission to gain more confidence on the scope, costs, and requirements of projects. For example, the Australian Energy Regulator's (AER's) recent guidance on the regulation of large transmission projects set out:

> *"Staging of projects or CPAs [contingent project applications] can reduce the risk of actionable ISP [integrated system plan] projects and increase flexibility to respond to changing market conditions or project risks as they arise. This is because each stage can reveal important information about the project, reducing the uncertainty associated with its costs and/or benefits. As such, there can be benefits to staging CPAs for actionable ISP projects that are particularly large, complex or uncertain."*[4]

We believe the Commission's approach to accepting and assessing stage projects would benefit from clarification. Additional guidance, like the AER has provided for Australian transmission network service providers would assist both us and the Commission to benefit from the staging mechanisms.

## Resilience

The Commission could provide greater clarity on how it will respond to expenditure proposals, and provide incentives, that would enhance network resilience, including to climate change, in a future where a greater proportion of energy is supplied via the grid.

Resilience to climate change is, and has been, a key planning concern for Transpower.

We are expecting demand for electricity will increase significantly until 2050.[5] A safe, reliable and resilient electricity transmission network will have to be the backbone of that future, even more so than it is today.

[4] AER, Guidance Note: Regulation of actionable ISP projects, 31 March 2021, page 25.

[5] For more detail see our Whakamana i Te Mauri Hiko – Empowering our Energy Future paper and our Electrification Roadmap.

Whilst safety and reliability are already strongly incentivised through the current regulatory framework, we consider the regulatory settings for network resilience need revisiting. We will need to ensure that the network's resilience reflects consumers' preferences. This may require us to invest in more projects were the primary outcome is improved resilience.

As part of our multi-year TCFD[6] programme, we have been working towards better understanding our climate change related transition risks, physical risks and liability risks to ensure mitigation assumptions are quantified and climate change scenarios are integrated into our strategic planning process.

As a critical infrastructure provider, we have an obligation to understand the challenges of observed and expected changes in climate and extreme weather, and to protect our network for the provision of electricity transmission services. Historically, we have included network resilience as part of our asset management planning. The mandatory TCFD climate risk reporting and disclosure framework has placed an expectation on us to understand, capture and mitigate climate change impacts on our network, and disclose any material impact to our stakeholders.

To date, we have initiated several work programmes to better understand our climate-related risk, particularly from higher intensity rainfall and flooding. Substations and lines infrastructure near rivers or in lower-lying areas are notably at risk. Options analysis and implementation of resilience initiatives will almost certainly lead to additional costs compared to our historic opex and capex.

We will continue to enhance our capability in the area of climate change risk and prepare for full disclosure with the TCFD recommendations in 2023 and full consideration in our RCP4 proposal.

We suggest the Commission considers the area of network resilience as part of the IMs review.

## Sustainability

The IMs could provide greater clarity on how expenditure proposals for sustainability (opex and/ or capex) will be assessed.

Reducing our carbon footprint by 60% by 2030 and achieving a net zero grid by 2050 are key objectives within our sustainability strategy.

Our carbon reduction objective is in line with other NZ companies that are members of the NZ Climate Leaders Coalition, and this objective is aligned with the NZ government's Paris agreement climate targets.

[6] Task Force on Climate-related Financial Disclosures.

There are several major challenges to meet these low carbon objectives within our transmission network portfolio – notably in the area of Sulphur Hexafluoride ($SF_6$) reductions.[7]

As the single largest contributor to our total carbon footprint (5,037 tCO2e in 2019/20), we are investigating the feasibility and costs of a strategy to minimise $SF_6$ leakage and look at alternatives to $SF_6$. However, such a strategy will require investment in alternative technologies that will come at a higher cost.

Our sustainability strategy also outlines several work programmes in response to emerging issues and international good practice, including maintaining and enhancing biodiversity, minimising waste across our operations and reducing and remediating land and water contamination. As our network traverses over 12,000 km and some 30,000 properties, each of these emerging issues will require increased investment to understand our impacts and ensure we can deliver on our commitments. For example, we need to understand the extent of the current biodiversity values potentially affected by our assets and ensuring these values are not adversely affected by our future activities. Similarly, we need to understand the scale of land contamination from our historic activities in order to prioritise remediation across our network.

We note Ofgem's February 2021 final determinations for network allowances under the RIIO-2 price control which sets out "*outputs and incentives to further reduce the harmful impact that the transmission network and related business activities can have on the environment*". We consider that this is an area that the Commission should consider as part of the IMs review. We consider that incentivising us to minimise our emissions is consistent with Part 4 and the long-term benefits of consumers.

## Innovation

The current framework has strong incentives for networks to achieve efficiency savings for maintaining core services. Although, we believe the workability of some of the specific incentive mechanisms, e.g. the opex IRIS, can be improved.

However, there are few allowances for networks to investigate and test innovative services or approaches. Overseas regimes, for example in Australia and Great Britain, have specific funding mechanisms. For example, the AER has the Demand Management Innovation Allowance Mechanism, and Ofgem runs a Network Innovation Competition and provides a Network Innovation Allowance.

We consider that introducing similar funding mechanisms is appropriate given the energy sector's transition. Any mechanism(s) that are introduced should ensure that knowledge funded under these mechanisms is shared.

[7] $SF_6$ is a potent greenhouse gas, having 23,900 times more global warming potential than the equivalent amount of CO2. We hold approximately 80% of the $SF_6$ in the country. The gas is used as an insulator in substations, primarily in gas-insulated switch gear and circuit breakers, although it can be found in other equipment.

## Other

In the sections above, we have highlighted the key areas that we believe the Commission needs to consider in relation to support the transition to a resilient and net zero energy sector. There are several other areas we have identified with the IMs that could be improved, for example:

- introducing an opex IM would increase certainty and remove the need for the Commission to issue s53zd notices;
- as currently set out in the IM, the opex IRIS baseline adjustment term (IBAT) is difficult to calculate; and
- a better definition for exempt major capex is required.

We are keen to discuss these with the Commission in more detail during its full review of the IMs.