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Draft Energy Strategies
Ministry of Economic Development
PO Box 1473
WELLINGTON

Dear Sir/ Madam

**Re: Draft New Zealand Energy Strategy
Draft New Zealand Energy Efficiency and Conservation Strategy**

This is Transpower New Zealand Limited's submission on *Developing our energy potential*, the draft New Zealand Energy Strategy and draft New Zealand Energy Efficiency and Conservation Strategy.

New Zealand Energy Strategy (NZES)

Promotion and support of the appropriate development and use of energy resources

Transpower supports the Government's intention to create a regulatory and policy environment that promotes market-driven investment in a diverse range of energy resources. Diversity in the type and location of electricity generation will support security of supply. The delivery of this objective, and of the competition benefits that may result from greater generation diversity and greater retail competition, require a strong and reliable electricity transmission grid. We submit that the NZES should specifically identify the importance of continuing to develop and maintain the electricity transmission grid in order to enable a competitive electricity market and reliable and diverse electricity supply.

Transpower acknowledges the improvements that have been made to the regulatory framework consistent with the promotion of efficient transmission investment and looks forward to further improvements as part of the implementation of the Government's decisions following the Ministerial Review of Electricity Market Performance. The consolidation of revenue determination and grid investment oversight with the Commerce Commission and the independent development of the Statement of Opportunities by the Ministry of Economic Development are strategic changes that have the potential to produce meaningful benefits. The change to the Commerce Act's Part 4 purpose statement¹ to include a requirement that suppliers of regulated goods and services should have incentives to innovate and to invest, including in replacement, upgraded and new assets, is also a positive development. This policy initiative could usefully be carried over into the NZES, as it is important that we continue to replace and upgrade our ageing grid assets if the competition, reliability, development and efficiency goals in the NZES are to be achieved.

¹ Section 52A(1) of the Commerce Act 1986.

Barriers to investment in energy resources

In the past, the regulatory framework governing maintenance of and investment in the electricity transmission grid has sometimes impeded the achievement of efficient grid investment and maintenance, which, in turn, has impeded the ability of the grid to facilitate competition and promote the efficient and reliable generation and consumption of electricity. Improvements are now being made in the regulatory arrangements, but the NZES would benefit from a clear strategy to continue to eliminate barriers to efficient investment in and maintenance of the grid. In practical terms, we welcome the Government's promotion of a clearer, simpler and less prescriptive Grid Investment Test, which should take account of wider competition benefits, and the directive, by way of the Commerce Act's Part 4 purpose statement, that regulated suppliers should have incentives to innovate and invest.

The provision of a reliable electricity supply also requires the grid to be planned in way that provides sufficient flexibility to accommodate diverse and sometimes unanticipated supply and demand developments. To do this, Transpower needs to be able to modify the use of existing and new transmission corridors as requirements evolve and technologies change. To this end, the NZES could usefully promote the reduction of barriers to innovation and investment by including as an objective "maximisation of the flexible and resilient use of existing and new electricity transmission corridors to satisfy changing electricity supply and demand requirements". An objective of this sort could help to guide elements of the proposed phase 2 reforms of the Resource Management Act 1991.

Focus areas

Develop renewable energy resources

Transpower notes the aspirational target that 90 per cent of electricity generation should come from renewable sources by 2025, but submits that such an objective must be qualified by the need to maintain the security and reliability of New Zealand's electricity supply. We also note that many renewable resources, including wind, geothermal and hydro, are found in areas remote from load centres and will require a strong and reliable electricity transmission grid if they are to be developed effectively and efficiently. Transpower has successfully demonstrated the net economic benefits of investing in grid upgrades to facilitate new renewable generation. Currently, we are investing in grid upgrades in the central North Island and the lower South Island that will facilitate new geothermal and wind generation.

Competitive energy markets deliver value for money

As previously noted, to support this objective and deliver value for money, a competitive electricity market requires the platform of a strong and reliable electricity transmission grid.

Reliable electricity supply

Page 5 of the NZES identifies as a "Now" issue:

"New Zealand's electricity grid provides a high level of supply security, but aged equipment has raised concerns that supply interruptions might become more frequent".

A prolonged period of under-investment has contributed to more frequent supply interruptions. New Zealand's transmission grid is older and more heavily loaded than those found in many other developed countries. Transpower's current investment programme is working to turn this situation around, but achieving the goal of a more reliable and efficient grid will require several more years of concerted and focused effort. As noted above, Transpower welcomes the improvements to the regulatory framework, which should promote

simpler and more streamlined investment procedures and incentives to innovate and invest. Also as noted above, these initiatives could be further reinforced by the inclusion in the NZES of an objective to maximise the flexible and resilient use of existing and new electricity transmission corridors to satisfy changing electricity supply and demand requirements. Long term planning and clear objectives should help ensure that real-time security can be achieved in the future – this includes supply side and demand side management options, in addition to investment in the grid.

Under the “reliable electricity supply” heading (p. 13), the NZES states that the transmission system should “run efficiently with minimal losses”. Transpower supports this goal and currently has a working group examining transmission system losses. The working group was initially established to examine the extent to which losses might contribute to greenhouse gas releases and how that might be measured and reported. The group, however, has broadened its considerations to:

- identify all sources of losses;
- identify and explain possible means of managing these;
- examine how these losses are currently accounted for in our decision-making;
- identify the barriers to implementation of viable loss reduction measures and identify how these might be overcome;
- recommend actions to reduce losses.

Better consumer information to inform energy choices

Transpower agrees that better information can assist consumers to identify areas of energy wastage and save money by making changes. Extending electricity market signals to smaller consumers by way of “smart” meters, grid and appliance technologies should also help to improve the efficiency of energy use and enable consumers to make consumption decisions that more accurately reflect their own preferences. Transpower, as System Operator, has a particular interest in understanding the potential that “smart grid” technology has to reduce the cost of maintaining the common quality² of electricity supply.

Best practice in environmental management for energy projects

Transpower supports the Government’s drive for best practice in environmental management of energy projects, through the review and improvement of the administration of the Resource Management Act 1991 (RMA). Transpower has been pro-active in this regard, having contributed to the development of the National Policy Statement and National Environmental Standard on Electricity Transmission, which were promulgated in March 2008 and December 2009 respectively. Transpower’s North Island Grid Upgrade proposal was also the first to be called in under s.142 of the RMA and, as such, Transpower has considerable experience in the administration of the RMA with respect to energy infrastructure development. Transpower looks forward to the Government’s proposed phase 2 reforms of the RMA and will call on its experience to review and make detailed submissions on the proposed reforms.

² Common quality refers to those elements of the quality of electricity, such as voltage, frequency and the provision of reserve generation, that are provided by the grid for the benefit of all those connected to it.

New Zealand Energy Efficiency and Conservation Strategy (NZE ECS)

Increasing the energy efficiency of the public sector

Transpower notes that the NZE ECS sets an energy saving target for the public sector of a 10 per cent reduction in energy use per full-time staff equivalent by 2015 (p. 21), compared with a 2008/09 baseline. We currently have in place a target covering all office based greenhouse gas emissions³, some of which relate to energy use. Our target is to achieve a 20 per cent emissions reduction per full time employee by 2011/12, compared with a 2005/06 baseline. We produce an annual carbon footprint report, which reports our emissions. This enables us to identify areas for improvement and informs our emissions reduction programme. Key initiatives currently under way to reduce energy use include an energy audit of one of our offices and a plan to trial more energy efficient lighting in another office. Transpower will consider adopting the Government's public sector energy saving target.

The NZE ECS's policy sub-section on the Electricity System, (p. 27) expresses the expectation that, among others, the System Operator will:

“minimise lines losses and make efficiency gains in the operation of the system,....”

As noted above, Transpower has a working group examining transmission system losses, which includes the examination of losses related to system operation function.

Finally, Transpower welcomes the NZE ECS's acknowledgment (p. 27) that:

“new projects face consenting constraints and integrating intermittent renewables into the existing system creates new challenges.”

The electricity industry as a whole is currently addressing the problems associated with integrating significant tranches of intermittent generation into the transmission system with Transpower, as System Operator, taking a lead role.

Yours sincerely



Richard Fletcher
Regulatory Strategy Manager

³ Office based emissions include fuel use for vehicles, electricity use, waste and business travel.