

TRANSPower NEW ZEALAND LIMITED

Submission to the Ministry for Economic
Development on the Draft Government Policy
Statement on Electricity Governance

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TRANSPower



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1. Introduction

1.1 Purpose of this document

This is Transpower's submission in response to the Ministry for Economic Development's consultation on the draft *Government Policy Statement on Electricity Governance*, February 2008.

2. General comment

Transpower generally supports the draft Government Policy Statement (GPS) as it applies to electricity transmission and looks forward to working with the Electricity Commission to ensure that the objectives and outcomes specified in the GPS are achieved. Transpower notes that some objectives have been outstanding since the October 2006 GPS was promulgated and that further joint work will be required to progress these.

3. NZES and NZEECS

Transpower notes that the revised GPS clearly signals to all parties the Government's intentions with regard to giving effect to the NZ Energy Strategy (NZES) and NZ Energy Efficiency and Conservation Strategy (NZEECS).

The NZES states that "The government expects the Electricity Commission and Transpower to continue to develop guidelines that recognise the importance of transmission for investment in renewable generation."

Paragraphs 52, 89 and 98 particularly relate to the implementation of the Government's wider energy policies, including investment in renewable energy and the mitigation of climate change, viz.:

- 52 *[fourth bullet]* The Government's objectives in relation to renewable electrical energy, are that:
- the specification of the grid planning processes and approval criteria should allow grid upgrade plans to facilitate the efficient and timely development of renewable generation resources, taking into account the substantial difference in lead times for transmission and some generation investment.
- 89 *[fifth bullet]* The Government's objectives for the provision of transmission services are that:
- the national transmission grid should be planned and made available so as to facilitate the potential contribution of cost-effective renewables to the electricity system, and in a manner that is consistent with the Government's climate change and renewables policies.
98. Unless otherwise agreed by the Commission, grid upgrade plans should also be consistent with the statement of opportunity forecasts and wider Government energy policy, including applicable policies on renewable generation and climate change.

Some rule changes may be required to achieve these objectives¹. Transpower is working with the Electricity Commission to develop the Grid Upgrade and Investment and Review Process (GUIRP) which will assist in this regard. Transpower is also progressing two enabling renewables projects (the Wairakei Ring and Lower South Island upgrade) through the GUIRP process to test whether or not the current formulation of Part F of the Electricity Governance Rules (EGRs) can be appropriately applied to such projects. However, even with these initiatives, some improvements to the EGRs are likely to be necessary to achieve the Government's objectives.

Transpower recommends that the following sentence (as used in paragraph 53) be added to the fourth bullet point in paragraph 52 and the fifth bullet point in paragraph 89:

The Commission should recommend any Electricity Governance Rule changes that are necessary to achieve this.

4. Transmission – Background

Paragraph 88 states that poorly designed policies may encourage inefficient investment in generation or transmission. Transpower recommends that this statement be balanced by a comment that there is a countervailing risk of under-investment in transmission associated with the long lead times associated with transmission investment and the considerable regulatory hurdles and compliance costs associated with implementing transmission investments. Transpower's recommended wording is:

88 The way in which transmission services are provided and priced impacts both directly and indirectly on all parts of the electricity industry, the economy and the environment. Transmission has strong natural monopoly characteristics, which make it important that the Government set out its policy expectations as to how transmission services should be provided and priced and how Transpower should operate. Poorly designed policies may, for example, encourage inefficient investment in generation or transmission, which would waste scarce capital resources and cause unnecessary environmental effects. On the other hand, transmission investments, by their nature, require long lead times, and poorly designed policies may also create unnecessary regulatory hurdles and excessive compliance costs, which may lead to under-investment in transmission to the overall detriment of the economy and the environment. [*Recommended amendment underlined*]

5. Objectives for the provision of transmission services

5.1 Grid Reliability Standards

Paragraph 92 has been revised and now states:

92 The common standards for the grid should be determined by the Commission, following consultation with Transpower and affected parties. The Commission should, from time to time, review the standards to ensure that they promote a secure and reliable grid and that the interests of end-customers are properly taken into account.

¹ Transpower does not agree with the requirement in paragraph 98 that grid upgrade plans necessarily be consistent with the statement of opportunities forecasts. Section 4 below expands on Transpower's concerns with this requirement and proposes a recommended re-drafting of paragraph 98.

Transpower supports the revised wording. Transpower's interaction with customers since the development of the Grid Reliability Standards and the Core Grid definition contained in the EGRs indicates that the current narrow definition of the Core Grid may be resulting in a lower level of investment than that required to meet community expectations of grid reliability. The Grid Reliability Standards should also be aligned with best international practice by providing for higher levels of redundancy on the Core Grid where critical loads exist. Consequently, Transpower believes that it would be appropriate for the Commission to review the Grid Reliability Standards and the Core Grid definition in the near future and it proposes to work with the Commission and the industry to instigate such a review in the near future.

6. Investment in and maintenance of the transmission network

Paragraph 99 has been revised and now states:

- 99 Grid upgrade plans should demonstrate the rationale for all expenditure (operational, maintenance and capital), taking into account the prescribed reliability standards and good industry practice for power system operation. The plans should demonstrate that the proposed expenditure is required to meet reliability standards and/or deliver the greatest net benefit after taking into account transmission alternatives and Government energy policy requirements to the extent achievable.

Transpower believes that the wording of paragraph 99 may be interpreted to mean that the Grid Reliability Standards take precedence over – or even override - the other objectives for the provision of transmission services set out in paragraph 89. In Transpower's view, such an interpretation would be likely to lead to a level of investment inconsistent with community expectations. Grid reliability standards, good electricity industry practice and economic analysis should all contribute to sound decisions on grid expenditure, with no one being predominant over the others. Therefore, Transpower recommends that the first sentence of paragraph 99 should be extended to refer also to the objectives for the provision of transmission services set out in paragraph 89. Consequently, the second sentence should also be amended by deleting "reliability standards" and substituting "these standards". Transpower's recommended revised wording is:

- 99 Grid upgrade plans should demonstrate the rationale for all expenditure (operational, maintenance and capital), taking into account the prescribed reliability standards, good industry practice for power system planning and operation and the specific objectives set out in paragraph 89 of this Government Policy Statement. The plans should demonstrate that the proposed expenditure is required to meet reliability standards, and/or achieve the specific objectives set out in paragraph 89 and/or deliver the greatest net benefit after taking into account transmission alternatives and Government energy policy requirements to the extent achievable.

Paragraph 101 of the GPS has been amended from the October 2006 wording, as follows:

- 101 The Electricity Commission should make available to Transpower and other stakeholders clear and specific policies and processes relating to criteria on how grid upgrade plans in general and any particular plan specifically will be developed, and then reviewed and approved or rejected. These criteria should be clearly explained so

that ~~the a~~ review process and linkages to other processes such as the statement of opportunities are transparent and can clearly be understood and replicated by stakeholders. [*Changes from October 2006 GPS marked*]

The proposed changes to paragraph 101 have the potential to be interpreted to mean that the Electricity Commission has a role in the development of grid plans prior to their submission. This inadvertent interpretation would be inconsistent with the Government's objective in paragraph 100, and the views of Transpower and the Electricity Commission, i.e. that Transpower should be responsible for grid planning and the Commission responsible for reviewing and approving grid upgrade plans.

To avoid the risk of misinterpretation, Transpower recommends that the original wording of paragraph 87E of the 2006 GPS be substituted for the first sentence of paragraph 101, i.e. that it should read:

- 101 [*first sentence*] The Electricity Commission should make available to Transpower and other stakeholders clear and specific criteria for how grid upgrade plans in general and any particular plan specifically will be reviewed and approved or rejected.

6.1 Statement of Opportunities

The policy intention with respect to the statement of opportunities (SOO) is that it should be an information document to assist the development of possible alternative transmission and non-transmission investment solutions to grid management problems. The generation and load scenarios contained in the SOO should assist grid planning but it was never intended that grid plans should necessarily maintain strict consistency with any particular SOO scenario. Transpower believes that it would be helpful if this policy intention were to be expressed more clearly in the GPS. In the process of progressing recent investment proposals, Transpower and the Commission have agreed that the scenarios in the statement of opportunities will invariably need to be modified for any particular project, for reasons of the passage of time, the grid owner's access to better information at particular grid exit points, and the specific requirements and sensitivities of each particular project.

Transpower therefore recommends the following amendments to paragraph 98 and the second sentence of paragraph 101:

- 98 Grid upgrade plans should be consistent with wider government energy policy including applicable policies on renewable generation and climate change and should have regard to the scenarios in the statement of opportunities.
- 101 [*second sentence*] These criteria should be clearly explained so that the review process is transparent and can be clearly understood by stakeholders.

To clarify the status of the SOO Transpower recommends that the first sentence in paragraph 95 be amended as follows:

- 95 [*first sentence*] As part of its modelling and forecasting work, the Commission should provide for the development of statements of opportunities to provide information to assist the identification of potential investment opportunities. [*Amendment underlined*]

Transpower also recommends that paragraph 95 require the statement of opportunities to give specific consideration to security of supply by adding the following bullet point:

- assist the achievement of security of supply objectives specified in section 6 of this Government Policy Statement.

6.2 Transition to extended investment envelope

Paragraph 97 provides, *inter alia*, that any grid upgrade plan should:

- 97 [...] enable consideration of investment proposals for the grid as a whole within a longer term framework (for example, over five years).

Transpower strongly supports this concept as an appropriate development of the regulatory arrangements for regulating grid expenditure and looks forward to working with the Electricity Commission and the Commerce Commission to develop appropriate means by which to facilitate the achievement of this objective.

7. Electricity Efficiency

7.1 Discount rate

Paragraphs 42 and 43 of the proposed GPS state that:

42. The Government has adopted a discount rate of 5 per cent real per annum for cost-benefit analyses of energy efficiency and other measures under the NZES and NZEECS. This lower discount rate reflects the long-term nature of benefits, including those designed to address climate change and other environmental externalities.
43. The Government expects the Commission to include an assessment using a 5 per cent real per annum discount rate, and to advise how this has been taken into account, when assessing the cost-effectiveness of electricity efficiency programmes or arrangements.

Transpower has maintained that the appropriate discount rate to use for transmission investments is a social discount rate of around 4 per cent, based on the social rate of time preference. Rule 14.2 of Schedule F4 of Section II of Part F of the EGRs currently requires 7 per cent pre-tax real discount rate to be used for grid investment test analyses, although rule 14.1 permits the Electricity Commission to determine a different discount rate.

Transpower also notes that the NZES refers to the fact that the discount rate used for all government policy-making in the United Kingdom has recently been revised to 3.5 per cent real per annum.

Given that a considerable proportion of future transmission investment will be undertaken to support the NZES, and could be classified either in its entirety or, at least in significant part, as investment designed to address climate change and other environmental externalities, Transpower recommends that the GPS include a specific requirement that a 5 per cent pre-tax real discount

rate be used as the basis for all grid investment test analyses of grid upgrade plans.

8. Renewable Energy

The GPS refers to the Government's target that 90 per cent of electricity should be generated from renewable sources by 2025 and specifies, in paragraph 52, a number of objectives that will facilitate the achievement of this target.

Transpower is concerned that the target appears to have been set without any consideration being given to the portfolio of such generation and the implications that this may have for security of supply and the quality and reliability of supply, including the provision of voltage support, the maintenance of frequency stability and the maintenance of the overall stability of the electricity supply system. Transpower recommends that the GPS address these concerns by stating that the 90 per cent renewable generation target must be achieved by way of a generation portfolio that is consistent with the Government's key requirements for security of supply, described in paragraph 55 of the GPS, and consistent with the maintenance of supply quality and system stability. Consequently, Transpower recommends that the following words be added to the final bullet point in paragraph 52:

- ...and the need to maintain adequacy, reliability, security and quality of supply (in particular voltage support, frequency stability and overall system stability).

9. Security of Supply

9.1 Key requirements of security of supply

The third bullet point in paragraph 55, which refers to the sufficiency of capacity to cope with extreme dry sequences, periods of low wind speed and other supply disruptions appears to confuse the need for additional generation capacity with short term energy requirements. The short term and long term supply problems are likely to require different solutions and should be addressed separately.

Transpower supports the identification by the fourth bullet point in paragraph 55 of the availability of quality information and forecasts, including information and forecasts relating to wind flows, as a key requirement contributing to security of supply. However, Transpower believes that this key requirement should be further expanded to require appropriate incentives to be developed to encourage intermittent generators to improve forecasting, as improved forecasting by intermittent generators will be critical to the achievement of system security as the relative proportion of wind generation capacity increases.

The new GPS has removed the 1 in 60 dry year standard (paragraphs 57 and 58) and replaced it with another standard relating to mean winter energy margins. It is not clear whether the winter energy margins take proper account of the greater constraint on HVDC southward transfer that will apply

until the replacement of Pole 1 of the HVDC link can be commissioned. The Commission's current minzone definition refers to north and south of Bunnythorpe and reflects the fact that the critical factor constraining energy delivery from the North Island in dry years is the transmission system in the lower North Island, not the HVDC link itself. However, the winter energy margins proposed by paragraph 58 are defined by island. To be consistent with the minzone definition, the winter energy margins should relate to north and south of Bunnythorpe.

While paragraphs 57 and 58 specify how risks to security of supply resulting from the variability of hydro inflows should be managed, there are no specific provisions requiring the Commission to develop arrangements to manage the risks to security of supply presented by increases in wind generation capacity. Transpower therefore recommends that the following additional paragraph be inserted:

The Commission should also ensure the development of specific arrangements to manage the risk to adjacency, reliability and security of supply, presented by increased wind generation capacity.

Transpower fully supports paragraph 59, which requires the Commission to develop and set security standards for adequacy of capacity to meet peak demand. This requirement aligns well with the outcome of recent work by Transpower as System Operator leading the National Winter Group in 2007 and 2008.

Paragraph 60 requires the EC to work with key stakeholders to identify industry contingencies and develop strategies consistent with the operation of the electricity market to manage supply and demand during such contingencies. As currently worded this requirement is a little cryptic and needs to be clarified. It presumably refers to issues relating to dry years and winter peak capacity, which, to date, have been successfully managed by industry working groups not co-ordinated by the Commission (i.e. the CEO forum for the 2003/2006 dry years and the System Operator led National Winter Group for 2007 and 2008). Transpower, as System Operator, has also arranged forums to manage tight supply situations into Auckland and the upper South Island. In Transpower's view, these arrangements have proved successful and should continue. Transpower therefore recommends that the requirements in paragraph 60, the fourth bullet point in paragraph 61 and paragraph 66 should clearly state that the Commission, should, wherever possible, implement these requirements through the existing collaborative bodies, such as the System Operator's National Winter Group and its summer and winter upper North and South Island industry management groups.

9.2 Demand side response

Transpower has developed some experience with demand-side response through its trial of grid support contracts. On the basis of this experience, Transpower recommends that paragraph 74 be re-drafted along the following lines:

74. When contracting for reserve energy, the Commission should consider contracting for demand-side response alongside generation options, provided that this is practicable and the Commission is confident that the reduction in demand would be additional to normal demand-side response to higher prices, distribution network management or ancillary service provision, and that such response is not committed to security services such as automatic under-frequency load shedding.

9.3 Hydro storage guidelines

Transpower supports the publication of the guidelines described in paragraph 68 to better inform the market based response to any emerging dry year risk.

9.4 Reserve energy

Paragraph 55 of the October 2006 GPS required the Commission to publish its processes for procuring reserve energy and assessing competing offers. This requirement appears to have been replaced by the requirement in the third bullet point of paragraph 61 to develop, consult on and publish the procurement and utilisation policies for reserve energy. The critical change seems to be the removal of the requirement for the Commission to publish its processes for assessing competing offers. Transpower recommends that the requirement to publish the Commission's assessment processes be reinstated, as the Commission operates in a competitive market when procuring reserve energy and its assessment processes should be transparent.

10. System operation and wholesale and related markets

10.1 Transmission risk management

Transpower notes that while the previous section on financial transmission rights (FTRs) has been deleted, what has replaced it includes the overall aims that FTRs sought to achieve. Paragraph 87 states that:

87. The product developed should include the following broad principles:
- Realistic long-term risk management mechanisms should be made available to all parties that face financial risks arising from spot price effects caused by transmission losses and constraints;
 - Economic efficiency, including the integrity of price signals, should be maintained or improved; and
 - Solutions should be pragmatic and not overly complex.

Transpower recommends that the last bullet point be re-phrased as "Solutions should balance economic efficiency with pragmatism, and provide a system that is not overly complex to users". Some good products in this area are simple to use but require complex software, and it would be inappropriate to rule them out.

Transpower also recommends also that a fourth principle be added:

- So that participants can hedge their varied and changing financial contract exposures, the product should be tradable between participants, provided that this is feasible and economically desirable.

11. Interrelationship with the Commerce Commission

Transpower notes that the Memorandum of Understanding between the Electricity Commission and the Commerce Commission (MoU) was updated in August 2007 and that this update added an accompanying transmission protocol to the MoU. Transpower further notes that this protocol will need to be reviewed to make it consistent with any outcome from Transpower's administrative settlement discussions with the Commerce Commission, which are expected to be finalised in the near future, and with any amendments to Part 4A of the Commerce Act 1986, which may result from the passage of the Commerce Amendment Bill which is currently before the House of Representatives.

Transpower recommends that the Government's expectation that the protocol will be reviewed to make it consistent with the administrative settlement between Transpower and the Commerce Commission, and with any future amendments to Part 4A of the Commerce Act 1986, be specifically included in the GPS.