

Submission to:
Ministry of Economic Development

Submission on: Draft Government Policy Statement on Electricity
Governance – February 2009

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Attention: Electricity Group
Energy and Communications Branch

Copy to: Honourable Gerry Brownlee, Minister of Energy and Resources
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SUBMISSION OVERVIEW

- A. Objectives for the Provision of Transmission Services.
- B. The Electricity Commission: Is the Combined Role of Rule Maker and Regulator in the best interests of Consumers?
- C. The Electricity Commission and Interpretation of the Government Policy Statement on Electricity Governance.
- D. Sector based Grid Reliability Standards for parts of the Grid outside of the Core Grid.
- E. Reliability Standards: The Electricity Commission and the Commerce Commission.

A. OBJECTIVES FOR THE PROVISION OF TRANSMISSION SERVICES

Recommendation

1. That the wording of paragraph 71, bullet point 1 of the Draft Government Policy Statement on Electricity Governance (GPS) be amended to read:

*“the services are provided in a manner consistent with the Government’s policy objectives for electricity, and in particular, that grid reliability should be maintained at a level required by residential, commercial, industrial **and agricultural sector** users and the Government’s economic objectives”* (GPS, para 71.1, page 20, proposed amendment bold).

Reasons

2. It is paradoxical that while the agricultural sector continues to grow in terms of GDP output, export earnings and as a significant employer, the Draft Government Policy Statement on Electricity Governance specifically only identifies residential, commercial and industrial users as requiring a level of grid reliability which is adequate to meet their needs.
3. The growth in dairying and the processing of dairy products is increasingly energy intensive. The cost of electricity to run a typical spray irrigated dairy farm is up to one fifth of the farms gross income, ie one dollar per kilogram of milk solid revenue based on a payout of \$5 per kilogram. And, the production of milk powder consumes around 95% of Fonterra’s electricity requirements.
4. The processing of meat in an efficient and cost effective manner is likewise dependent on a high level of reliability of electricity supply, from the national grid and the distribution network which services a freezing works.

5. The effect of low probability, high impact events on agricultural sector businesses also needs to be accounted for in terms of grid reliability level. Typically, the duration of an outage due to grid failure is significantly higher in rural areas than urban areas. And, while in the rural area fewer consumers may be adversely affected, none the less the potential economic cost of lost load to agricultural based businesses cannot be ignored.
6. Furthermore, the nature of agriculture production is such that the economic impact of unserved energy or lost load extends well beyond the farm gate and the primary businesses affected. No aspect of agricultural production occurs in isolation. Farm output, its processing through to distribution and consumption of the final product is a sequential, multi-layered activity. It also involves inputs from a range of businesses which service the agricultural sector, be it transport operators or cool-stores, for example. Hence, disruption of one level also has adverse economic effects further down the chain.
7. In conclusion, Waitaki Power Trust contends it is essential that:
 - a. The objectives of the Government Policy Statement on Electricity Governance be amended to formally recognise the agricultural sector as a user of the national grid; and
 - b. The requirements of the agricultural sector for a high level of reliability of electricity supply be formalised in the Government Policy Statement on Electricity Governance in terms of the level of grid reliability to distribution lines networks which primarily service rural areas.
8. Trustees urge that the GPS is amended to require the Electricity Commission to take up on these points.

B. THE ELECTRICITY COMMISSION: IS THE COMBINED ROLE OF RULE MAKER AND REGULATOR IN THE BEST INTERESTS OF CONSUMERS?

Recommendation

9. That the GPS should be amended to further incentivise the Commission
 - not to adopt a dogmatic rule worship approach when carrying out its regulatory role; and
 - to focus on consumer requirements when setting rules or standards that activity by the component parts of New Zealand's electricity system will be bound by.

Reasons

10. The Draft Government Policy Statement on Electricity Governance tacitly notes that the authority, scope of activity in general, role and responsibilities of the Electricity Commission is set by the Electricity Act 1992 (s172N) and that the

“Government Policy Statement sets out the objectives and outcomes the Government wants the Commission to give effect to” (GPS, forward, page 3).

11. In the interests of clarity two matters unstated by the GPS need to be made explicit.

- Firstly, the GPS not only puts constraints on the general parameters within which the Electricity Commission is authorised to act by the Electricity Act 1992 but also requires the Commission to operate in a pragmatic manner by focussing on consequences or outcomes.
- Secondly, from a casual reading of the purpose of the GPS as stated above it could be assumed that the Government’s requirements of the Electricity Commission embody the so called ‘black box’ operational model: objectives in, outcomes out, and no instructions to the Electricity Commission in between.

12. This is clearly not the case.

13. The GPS does include a wide range of operational instructions to the Commission.

14. The tenor of those which give rise to concern is where the Commission has authority to both set standards or rules and monitor compliance with them.

15. For example, consider grid reliability standards. The GPS informs us that a common set of grid reliability standards

“should be determined by the Commission” (GPS, para 74, page 71).

16. Elsewhere we find

“these common standards should be embodied in rules” (GPS, para 72, page 21).

17. Accordingly, any upgrade plan submitted by Transpower for approval by the Commission

*“should demonstrate the rationale for all expenditure (operational, maintenance and capital) taking into account the **prescribed reliability standards**”* (GPS, para 81, page 22, emphasis added).

18. That the GPS both authorises the Commission to set prescriptive reliability standards for the grid **and** then put on its regulator hat and be the sole adjudicator as to whether proposed investment by Transpower complies with the Commission’s reliability rules, is unacceptable on a number of grounds.
19. The phenomenon of ‘rule worship’ is well recognised and is commonly found in situations where an individual or group of individuals has the authority to set rules and the ultimate say as to whether the rules are being complied with.
20. The enactment of ‘rule worship’ eventually results in dogmatic decision-making which is the antithesis of permitting Transpower’s customers

“some flexibility over [reliability] standards (which could be higher or lower than the norm), so long as the integrity of the core grid is not compromised” (GPS, para 75, page 21, [reliability] added for clarity).
21. It is of concern that the Electricity Commission has not picked up on this requirement and given rural consumers and the agricultural sector a say in reliability standards which would meet their needs. Is this an example of the closed mind effect of rule worship?

C. THE ELECTRICITY COMMISSION AND INTERPRETATION OF THE GOVERNMENT POLICY STATEMENT ON ELECTRICITY GOVERNANCE

Recommendation

22. That the Commission’s performance be assessed against measurable outcomes, the content of which focuses on a consistent interpretation of the operational protocols set by Government as the ‘modus operandi’ for the Commission to adhere to in achieving the objectives assigned to it by the GPS.

Reasons

23. Provisions relating to the Commission’s powers and approach make it plain that whenever possible the Commission should
 - work with stakeholders;
 - adopt a so-called light handed approach towards achieving its objectives;
 - formulate guidelines and model arrangements and monitor compliance with these; and
 - set rules and recommend regulations only where necessary or as a last resort (Refer GPS, papa 1-3, page 6).
24. And, as we have seen above, the GPS allows for some flexibility of grid reliability standards to meet Transpower customer requirements.

25. None-the-less the Commission has,
 - Set rules regarding grid reliability or security levels; and
 - the rules are based on the principle that some sections of the grid require higher levels of reliability than others.
26. Specifically, whereas the security of the core grid is to be maintained at n-1, for parts of the grid outside of the core grid, n level of reliability is regarded by the Commission as appropriate.
27. This example challenges the Commission's interpretation of substantive requirements of the GPS.
28. The GPS, requires that

*“The common standards for the grid should be determined by the Commission, following consultation with ... **affected parties**”* (GPS, para 74, page 21).
29. Furthermore,

“The Commission should, from time to time review, the standards to ensure ... that the interests of end-customers are properly taken into account” (GPS, para 74, page 21).
30. It is pertinent to ask to what extent, if at all, has the Commission worked with the agricultural sector in arriving at a set of Grid Reliability Standards?
31. Did they consult with Federated Farmers or grass roots users from the agricultural sector?
32. So far as Waitaki Power Trust can ascertain from discussions with Federated Farmers both at Head Office in Hamilton and locally, the answer is 'no'.
33. In the case of the agricultural sector it is evident that the process to be followed by the Commission in setting Grid Reliability Standards, has fallen on deaf ears.
34. Could it be that the Commission's failure to follow due process as required by the GPS and faithfully interpret and implement the instructions by the Government is to some extent, the result of an inflexible attitude due to 'rule worship'.
35. Waitaki Power Trust has recommended the drawing up of a set of performance measures which it is envisaged would be used by an independent body to assess the Commission's performance.
36. It would be unfortunate if this recommendation were to be put in the 'too hard' basket simply because there is no existing governmental body which could fulfil the role.
37. Something needs to be done as the Commission is simply not doing its job in the manner required by the GPS.

D. SECTOR BASED GRID RELIABILITY STANDARDS FOR PARTS OF THE GRID OUTSIDE THE CORE GRID

Recommendation

38. That the Government Policy Statement be amended to require the Electricity Commission to have due regard to and assign priority weighting to the cost of unserved energy or lost load to the agricultural sector; and

that the assessment of cost includes environmental costs associated with the disposal of all lost product and the downstream costs of disruption for businesses which service the agricultural sector, when determining reliability levels for parts of the grid outside the core grid.

Reasons

39. As we saw above, under Electricity Commission Grid Reliability Standards (GRS) Transpower is required to maintain higher security levels for transmission infrastructure associated with the core grid compared with parts of the grid deemed to be outside the core grid, such as the regional grid serving much of rural New Zealand.

40. Hence, to be approved under the Electricity Commission's Rules, any reliability investment proposal in the core grid put forward by Transpower is required to

“ensure an n-1 security standard can be maintained” (Transpower, 2009, Lower Waitaki Reliability Investigation Project, 2.1, page 4).

41. In the case of a proposed upgrade of the 110kV transmission network in the lower Waitaki region that is not part of the core grid, it turns out that n level of reliability would satisfy both the Grid Investment Test and the Grid Reliability Standards set by the Electricity Commission.

42. **That an outcome of the Commission's rules is that the electricity requirements of agricultural businesses can be served by a single circuit transmission line is totally unacceptable, especially where in circumstances the result is that services are being reduced even though demand is increasing.**

43. Transpower acknowledges that at n level of security the local distribution lines network will need to shed load during outages and maintenance.

44. Moreover, even with the current n-1 level of security to a major local substation Transpower predicts that for the 2009-2010 year shutdowns for maintenance on one or other of the two dual circuit feeds into the local distribution network will total 13 days with no allowance for outages due to faults or vehicle accidents.

45. At a level of security the prospect of shutdowns for maintenance with no electricity supply to the local lines network's major substation, makes a nonsense of the term 'load management'.
46. In the lower South Island it is not as if shutdowns for grid maintenance could be timed for the winter months when the agricultural sector electricity requirements would be less – weather and ground conditions generally would preclude that option. It is important to recognise that due to change of farming practices agricultural load peaks in summer, whereas urban load peaks in winter. There are no longer low load periods for maintenance where the grid services rural areas.
47. Furthermore, Government in particular, needs to consider whether rural New Zealand which is home to almost all agricultural businesses, should be subjected to a second-class level of grid reliability.
48. The Electricity Act 1992, s 172N states that
- “The principal objectives of the Commission in relation to electricity are –*
- a. to ensure that electricity is produced and delivered to **all classes of consumers** in an efficient, fair, reliable, and environmentally sustainable manner”* (GPS. Appendix I, page 31).
49. And, as we have already seen, a Government objective for the provision of transmission services is that
- “the transmission grid should be **adequately resilient** against the effects of low probability but high impact events having regard to the load which could be disrupted and the duration of any disruption”* (GPS, 2009, para 71, bullet point 2, page 2).
50. Additionally, the following instruction to the Commission quoted below is a clear statement of the Government's view
- that a one size fits all approach or single set of Grid Reliability Standards is not appropriate; and
 - that users should have a say in the level of grid security they require.
51. In the words of the Government Policy Statement
- “Transpower's customers should be permitted **some flexibility over standards** (which may be higher or lower than the norm) so long as the integrity of the core grid is not compromised”* (GPS, 2009, para 75, page 21).
52. Electricity Commission Rules require that unserved energy differences or the cost of lost load is valued at \$20,000 per MWh (Transpower 2009, 801, page 16).
53. This value was arrived at in 2004.

54. The Commission's flat rate valuation of lost load is another example of a one-size-fits-all-approach which is unacceptable.
55. Moreover, the assigned value has been calculated relative to the cost of lost load incurred by directly affected business only – it does not take into account the sequential, multi-layered nature of agricultural sector activity which is such that disruption at one level has consequences or flow-down effects for other businesses in the chain.
56. It is timely with the release of a Draft GPS that the issues raised above are dealt to.
57. Waitaki Power Trust has proposed a recommendation that could provide part of a solution.
58. A further option would be to implement an earlier recommendation and formulate performance measures against which the extent to which edicts by the Commission can be assessed for consistency with the objectives, outcomes and operational matters detailed in the GPS.
59. Waitaki Power Trust is adamant that changes are needed. A primarily top down approach to grid reliability standards won't do.
60. It is evident from the situations that Transpower and the agricultural sector find themselves in that the Electricity Commission is not fulfilling its role in the manner required by the Government Policy Statement on Electricity Governance.

E. RELIABILITY STANDARDS: THE ELECTRICITY COMMISSION AND THE COMMERCE COMMISSION

Recommendation

61. That the Government Policy Statement on Electricity Governance be amended, to include in Section 9, Inter-relationship with the Commerce Commission,
 - a common set of reliability or security of supply standards against which the performance of both the grid and distribution lines networks can be assessed;
 - that the Commerce Commission be assigned the monitoring or regulatory role; and
 - that the same accountability requirements apply for breaches by the grid and by distribution network systems.

Reasons

62. The GPS, Section 9 identifies a range of matters which require the Electricity Commission and the Commerce Commission to work closely together, including the regulation of Transpower and electricity lines businesses.
63. But whereas regulation of Transpower by the Electricity Commission is authorised by the Electricity Act 1992, the Commerce Commission's regulatory role comes under provisions by the Commerce Act 1986.
64. To ensure that their respective roles are co-ordinated a Joint Memorandum of Understanding has been developed relating to
 - a methodology of expenditure by Transpower;
 - how the Commerce Commission's price setting regulations interact with the Electricity Commission's pricing methodology for Transpower;
 - how distribution losses are to be managed;and so on.
65. However, there is a huge gap operationally between the two Commissions, in terms of setting, monitoring and accountability outcomes for breaches when it comes to grid and distribution lines levels of reliability as distinct from security.
66. Distribution lines company reliability standards are expressed in terms of
 - Systems Average Interruption Duration Index (SAIDI); and
 - Systems Average Interruption Frequency Index (SAIFI).
67. In each case what is being assessed is the annual average length of time each customer of a distribution network company is without power and how frequently each year is the average customer without power.
68. SAIDI required levels of distribution network reliability are calculated in **minutes per year**, and were based on a 5 year average annual duration of outages to March 2002.
69. For 2006, the average SAIDI figure for all distribution lines networks was 170 minutes, and the median was 140 minutes.
70. For the same year (2006) the SAIDI figures for our local lines network was 102 minutes which resulted in a breach of the annual SAIDI figure of 72 minutes set by the Commerce Commission.
71. Indeed, our local distribution lines company has breached the Commerce Commission's SAIDI figure for the network annually since 2002 resulting in the Company coming under the watchful eye of the Commerce Commission

and participating in a 'please explain' investigation by engineering consultants appointed by the Commerce Commission.

72. There is a significant externality factor so far as the reliability of supply by distribution networks is concerned, namely, the reliability of Transpower feeds to the network.
73. While the Commerce Commission does not finger point when distribution outages occur due to Transpower faults or shutdowns for maintenance, the companies' consumers neither have the same view, nor are privy to the same information as the Commerce Commission.
74. The fact that Transpower is not bound by reliability standards expressed as a function of the average duration of outages to each consumer annually, but rather is required to comply with security standards relating to n, n-1, n-2 and so on, that is, whether there are one, two, three or more dual transmission lines between the same two geographic points, is a significant source of tension between distribution network companies and their consumers, particularly in rural areas.
75. No reliability standards are applied at grid connection asset level. Lost customer minutes associated with total loss of supply to a grid customer is considered insignificant in terms of total grid system reliability.
76. **From the rural consumer perspective, when the power goes off due to a Transpower fault blame is attributed wholly and solely to the network company.**
77. The issue is not given prominence by the media and there is no 'please explain' addressed to Transpower, with the exception perhaps of a request for an explanation from the local lines network.
78. Indeed, it would seem that without a reliability index similar to that required by the Commerce Commission for distribution networks that Transpower's performance can be assessed against, there is no formal basis on which the grid operator can be called to account.
79. In large urban areas however, it is a different matter.
80. Transpower is held accountable for loss of power to consumers if disruption is due to grid failure.
81. But in these instances a different, 'unwritten' form of rules apply, compared with those applicable to distribution networks when outages occur.
82. Accountability, investigation and censure of Transpower is initiated by politicians; it is politically driven.
83. The discrepancies identified above are unacceptable.
84. It is fair to all parties that blame and accountability lies at the feet of the offender.

85. And, in many instances especially when large numbers of consumers are affected or the duration of an outage is for an extended period, the distribution lines company is not at fault.
86. In that circumstance, it is unjust and unacceptable that blame is placed on the local network and that service levels by the distribution company can be regarded by consumers as unsatisfactory.
87. The solution lies in assessing reliability standards in terms of performance measures rather than by infrastructural components alone.
88. Waitaki Power Trust believes that distribution networks and consumers would benefit if reliability assessment in terms of performance measures especially at connection or grid exit points were introduced for Transpower.
89. The problem is that grid and distribution standards are inconsistent with each other. They need to be co-ordinated in order to deliver meaningful outcomes for consumers.
88. It is timely that this issue too, is addressed while the Government Policy Statement for Electricity Governance is still in draft form.
89. Trustees thank you for the opportunity to submit on the Draft document and urge that the recommendations which have been put forward are given due consideration.

Dr Helen Brookes
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