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14 October 2009

Kate Hudson  
Electricity Commission  
PO Box 10041  
WELLINGTON 6143

Dear Kate

**Re: Proposed availability and reliability index measures – interconnection asset services**

This is Transpower New Zealand Limited's submission on the Electricity Commission's 24 September 2009 consultation paper *Proposed availability and reliability index measures – interconnection asset services*.

We have responded to the Commission's specific questions in the table below and provided further comment and observations in the subsequent text.

Question No.	Response	General comment
1a) Do you agree with the options?	a) See general comment.	a) Aggregation of assets, in particular circuits, for reporting against index measures is problematic because of the individual nature of each circuit.
1b) Are there alternative or additional reasonably practicable options that should be considered?	b) Yes.	b) An alternative would be simply to report the performance of each asset for the current year and the previous five years rather than to have an aggregate measure. This would provide much greater transparency to the numbers published.
2. Do you agree that it is not reasonably practicable to quantify the benefits and costs of the options	Yes.	The benefits of the options are not quantifiable in dollar terms. Aggregated measures such as the ones in either option can be used only as high level indicators, not as the basis for decision making.
3. Do you agree with the conclusion of the cost/benefit analysis?	Yes, but there is sufficient information to enable the conclusion to be stated more strongly.	It is unlikely that option 2 would provide any greater benefit than option 1. The value of the benefits to grid users is uncertain for either option. However, it is certain that adopting option 2 would result in higher compliance costs. Hence, it is reasonable to conclude that option 1 would produce higher net benefits than option 2.
4. Are there other costs and benefits that should be included in the cost/benefit analysis?	See general comment.	See comment on 1b) above. The alternative approach described there is likely to provide more useful information and hence greater benefits for customers.

14 October 2009

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## Comment

Aggregated data for transmission circuits is of limited value because of the individuality of each circuit. As well as the double /single circuit pole/tower configuration alternatives, there are other factors that have an impact on the performance of individual circuits including:

- tower configurations and the extent to which earth wires have been installed on the line;
- the terrain and associated land use around the circuit, and the range of terrains that a circuit might pass through;
- tower footing, resistance and insulation levels.

Categorisation of circuits by double /single circuit pole/tower configuration is straightforward for those circuits which run on one line, but Transpower has a number of circuits that are partly borne on deviations, tees and extensions and may comprise a combination of single, double, pole and tower sections. (These combinations also result in circuits which are a mix of interconnection and connection assets, and for the purposes of the index measures proposed to date, a circuit which is a combination of interconnection and connection assets has been deemed to be an interconnection asset.)

Often it is not known exactly where a fault has occurred on a circuit and categorisation of an outage to single/double pole/tower might not be possible. Similarly, planned outages are often arranged to perform work on both circuit end equipment and overhead lines. Categorisation of an outage involving multiple jobs to meet the reporting requirements of option 2 would be problematic. If the outage were reported against all the relevant pole/tower/ single/double/ circuit end categories there would be double or multiple counting; if categorised against just one of the relevant categories the result would be skewed. Pro-rating the outage amongst the relevant categories would produce a meaningless result, as the basis for pro-rating would be highly subjective.

With respect to the categorisation of outages by fault / work location, Transpower's current records do indicate whether an unplanned outage was the result of a fault on the asset (not the branch) itself or a fault on other/circuit end or branch equipment. For planned outages, the available records show whether or not the asset removed from service was worked on, but for the reasons noted above, it would not be at all straightforward to build a report which accurately summarised the reasons for planned outages.

As noted in the table, a more useful option would be simply to report each interconnection asset with the performance for the last year and the previous five years (or a nominated five year period). This would show the actual historical performance for this circuit, and anyone interested could customise their analysis to their needs. This could be accompanied by a succinct summary of the line details. A possible layout for the end of year report follows on the next page.

14 October 2009

## Sample Report

### Availability and reliability of Interconnection Assets EGR Part F Section VI Rule 10.

HEN-OTA1	220kV 1 CP SC, 95 SL DC, 31.4 km					
Performance Measure	03/04	04/05	05/06	06/07	07/08	08/09
Planned Unavailability (%)						
Unplanned Unavailability (%)						
Planned Number Interruptions						
Planned Unserved Energy						
Unplanned Number Interruptions						
Unplanned Unserved Energy						

BAL-BWK-HWB1	110 kV 43 SL DC*, 116 CP 4 SP 255 WP SC, 87.6 km					
Performance Measure	03/04	04/05	05/06	06/07	07/08	08/09
Planned Unavailability (%)						
Unplanned Unavailability (%)						
Planned Number Interruptions						
Planned Unserved Energy						
Unplanned Number Interruptions						
Unplanned Unserved Energy						

Key
SL Steel Lattice
CP Concrete Pole
WP Wooden Pole
SP Steel Pole
DC Double Circuit
SC Single Circuit
* Circuit section is a connection asset

Yours sincerely



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