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Submissions
Electricity Commission
PO Box 10041
WELLINGTON 6143

Re: Frequency keeping cost allocation

This is Transpower New Zealand Limited's submission on the Electricity Commission's June 2010 consultation paper *Frequency Keeping Cost Allocation.*

As the purpose of the paper is to outline a transitional step towards the anticipated outcome of a more comprehensive review to be undertaken in 2014, Transpower considers that the key consideration is whether or not any change is warranted in the time period prior to the comprehensive review. Transpower does not believe that this is the case.

In Transpower's view, the paper's justification for an interim change to the cost allocation is based on largely unsubstantiated outcomes, permitting the system to be operated with narrower frequency keeping bands with the resulting benefit being a reduction in frequency keeping procurement costs. To substantiate such benefits the analysis needs to include:

- the quantity by which each class of causers would be expected to reduce the requirement for frequency keeping services;
- whether the aggregate of all reductions would allow the system operator to operate with a narrower frequency keeping band and procure less frequency keeping service, whilst maintaining security at all times (especially during peak periods); and
- whether the financial gain to key contributors would justify investment to reduce their impact on frequency keeping requirements.

Without such analysis the benefits remain uncertain.

To date, the system operator has not had to increase the size of the frequency keeping band as a result of noisy demand or as a result of the current level of wind generation. Therefore, any increases in frequency keeping costs have resulted from the costs of procuring frequency keeping services. The loss of functionality when the new market system was first introduced, and the reversion to procuring frequency keeping services on price alone, meant providers had to factor expected constraint costs into offer prices, which placed upward pressure on prices. Costs were reduced

when the frequency keeper was again selected on an optimised combination of price and constrained-on cost, removing the need for providers to take an ex-ante view of constrained on and off costs with imperfect knowledge of demand and offers.

The proposal in the paper that Transpower believes warrants the greatest consideration at this stage is the requirement for generators to not only maximise contribution to maintaining frequency within the normal frequency keeping band, but also maximise their contribution to managing frequency in the normal frequency band. This proposal is being consulted on in a parallel consultation paper *Normal Frequency – Generator Asset owner Performance Obligation*s (June 2010) that Transpower supports. The other options proposed are effectively wealth transfers with unsubstantiated benefits.

With regard to the statistical analysis, Transpower is concerned that while it may be possible to use ten second SCADA measurement data for one-off studies, to use the data on a routine basis as proposed in the paper would incur a high transaction cost in order to achieve the necessary quality assurance and compensate for missing data. Even then, Transpower questions whether the sophisticated nature of the proposed statistical analysis is appropriate, given the accuracy of the SCADA data available.

Yours sincerely

Ross Weenink
Acting Regulatory Strategy Manager

Questions

No.	Question	Response
Q1	Do you agree with the Commission that a full review of the cost allocation should be deferred until a more competitive frequency keeping market is put in place?	A full review of the cost allocation should be deferred until a more comprehensive review of frequency keeping is undertaken in 2014. The review will determine whether a frequency keeping market is justified in a market the size of New Zealand.
Q2	Do you agree that only relatively simple extensions of the existing arrangements be considered in the transition period?	Yes – but they must be demonstrated to be economically justified
Q3	Do you agree that a basis for allocating costs to generators holding dispensations from normal frequency obligations should be set out in the Rules?	Transpower supports the rule clarifications proposed in the consultation paper *Normal Frequency – Generator AOPOs* (June 2010). Each dispensation is granted on the basis of the particular non-compliance; therefore, a rules based obligation would need to be output driven and not specific to the varied input configurations. As a result, the process would rely on the ability to measure non-compliance which is not a simple task. It should also be noted that such an obligation may have the unintended consequence of some information being withheld. The increased compliance cost of subsequently gathering such information should be part of the cost-benefit analysis.
Q4	Do you agree that allocating costs to dispensations as discussed above is an appropriate transitional approach? If not, how should this be done?	The benefits remain unclear. The Commission has been considering this issue for several years now and in this time it appears that it has been unable to demonstrably quantify the benefits. Until there is evidence of such benefits there is a risk of simply making changes for changes' sake. Our preferred solution would be to retain the status quo, whilst seeking free governor action from generators within the normal frequency band.
Q5	Do you agree with the proposed approach to classifying noisy demand? If not why not?	We have concerns relating to both the approach to classify and penalise noisy demand. Classifying noisy demand relies upon continuous analysis of often second SCADA measurement data. The sophistication of the analysis of this data requires the data itself to be robust. SCADA analogue data is not suitable for a number of reasons: • the data has a variance of +/- 5% which could over or under estimate the degree of noise upon which participants are penalised; • it is not available 100% of the time and any method of replacing/averaging "missing data" would fail to reflect the measure of noise;

		• the metered data used in pricing captures a true reflection of the load used over a trading period. This is not always captured at the same locations as the SCADA data. Therefore, the frequency procurement costs would be derived from one set of data and the "noise" measured by another set of data and not necessarily at the same part of the grid. This does not seem to be an equitable way to apportion costs. The paper is silent on who will be carrying out the noisy demand analysis. Due to the use of SCADA ten second data, the analysis would require considerable time and effort and would not yield the type of accuracy that the methodology warrants. It is questionable whether the costs of producing the analysis would be worth the efforts made. Finally, Transpower is concerned that the proposed methodology will not differentiate between uncontrolled variation in demand and demand that is responding to system operator requests or as a result of an agreed demandside initiative such as the proposed Demand Side Bidding and Forecasting (DSBF) or Grid Support Contracts (GSC).
Q6	Do you agree that these are the main categories of costs for the proposal? If not, why not?	The main categories of cost identified are: 1. implementing the proposed changes to the Rules; 2. modifying settlement systems to account for and recover frequency keeping costs from key influencers; 3. initial classification of relevant generators and purchasers; 4. reviewing frequency keeping procurement levels in light of any changes in the level of noisy demand, intermittent generation and generators with free governor response; 5. monitoring the classification of relevant generation and purchasers over time. These are the costs to transition from one form of frequency cost allocation to another. These are not the costs to economically justify the need to change the allocation system. Point 4 states that a change to frequency keeping procurement costs could be reviewed in light of changes to noisy demand, intermittent generation and governors with free governor response. System operator observations suggest that the current MW bands procured for frequency keeping could not be lessened, especially during peak periods even if noisy demand were decreased or if wind penetration was increased. A reduction in frequency keeping costs is more likely to come from North Island generators providing FGA

		within the normal band. Although further investigation is required to quantify any benefits, one possible outcome of this action is that it may reduce the number of times the frequency keeper is pushed outside its band and hence reduce frequency keeping costs to rectify the variance. Based on operational observations, we would not anticipate the same gain from South Island generators providing FGA within the normal band. The results of the analysis do not match our observations; we would therefore advise that further investigations should be carried out before we could be comfortable about the paper's findings. The report estimates that all these fixed and variable costs, estimated on an annualised basis, will be less than $1m per annum. The system operator has not had the opportunity to evaluate the costs relating to its operations and so cannot back up these figures. As the cost-benefit justification for the options in the paper are based on the perception that benefits will outweigh costs or vice versa then we feel that the cost-benefit analysis cannot be substantiated.
Q7	Do you agree that the main potential benefit of the proposal is that some generators may remove dead-bands on governors in order to avoid a cost allocation?	Yes. However we are mindful that in order for some generators to do so equivalence arrangements or dispensations may be required, due to technical limitations.
Q8	Do you agree with the Commission's assessment of potential benefits of the proposal?	The main benefits identified are: 1. if some generators remove dead-bands then the system operator may be able to reduce the amount of frequency procurement necessary; 2. noisy demand could take lower cost actions to reduce their impact on frequency keeping requirements, allowing the system operator to anticipate significant load variations in the dispatch process; 3. noisy demand and intermittent generation should face the cost of the frequency keeping charge that they impose on the system. The outcome of the proposal is a wealth transfer. Therefore, the only benefits achieved are by those purchasers who currently pay for frequency keeping costs and will subsequently pay a smaller proportion of the costs if the overall cost is spread amongst more participants. A substantial benefit to the industry as a whole is not achieved unless a reduction in the frequency keeping cost is achieved. This is unlikely to happen as +/- 50MW bands are required at peak periods.

Q9	Do you agree with the Commission's overall assessment that the proposal has the highest net benefits?	Transpower's preferred option is Option A. This is based on our view that a transitional step towards the anticipated outcome of a more comprehensive review to be undertaken in 2014 is not warranted beyond the enforcement of free governor action in the normal band where this is possible.
Q10	Do you agree with the Commission's overall conclusions? If not, why not?	No, for the reasons set out in the responses above.