



MAJOR ELECTRICITY USERS' GROUP

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By email to info@electricitycommission.govt.nz

Dear Bruce

Submission on draft Grid Planning Assumptions

1. This is a submission by the Major Electricity Users' Group (MEUG) on the Electricity Commission (EC) *Grid Planning Assumptions (GPA) February 2008 draft for consultation: Overview Paper*, 20 February 2008 (the "Overview paper"). In addition the EC has published a range of material on the web and made presentations at workshops¹. Finalising the GPA is one step closer towards publication of a new Statement of Opportunities (SOO).

Concerns at delay in finalising a new SOO

2. MEUG is disappointed the EC decided to delay the SOO process pending finalisation of the New Zealand Energy Strategy (NZES). Political views and targets, such as those in the NZES, will from time to time emerge. If the EC delays publication of a new SOO each time there is a change in the political wind, then that will undermine the value of the SOO as being an up to date and politically independent view of credible futures against which market participants can test investment opportunities.
3. To overcome this problem re-occurring MEUG suggest the EC consider a rule change to specify a pre-defined timetable for the SOO to be revised, such as every two years.

Consumer behaviour in response to new TPM

4. The forecast regional peak demand forecasts need to be dampened due to the change in behaviour by consumers in response to the new Transmission Pricing Methodology (TPM). There are strong commercial incentives on TOU consumers that can avoid Regional Coincident Peak Demands (RCPD) to do so. Several MEUG members have already adapted processes to monitor and react to RCPD. We expect that others will learn from that experience and hence historic trends for peak demand growth will no longer be a useful guide for the future.

Carbon price

5. The highest assumed carbon price is \$50/t CO₂-e in 2018. MEUG suggest this is no longer at the credible upper bound of forecast carbon prices. The Minister of Energy presented a slide at the Petroleum Conference on 11 March 2008 illustrating predictions from a number of sources ranging between about US\$30 up to US\$80 per tonne in 2030². These are expected carbon

¹ Thirteen documents and spreadsheets are listed at <http://www.electricitycommission.govt.nz/consultation/GPA>

² Refer <http://www.beehive.govt.nz/speech/petroleum+and+new+zealand+energy+strategy>

prices. When converted to NZ\$ and some estimate for high rather than expected prices is made, the EC assumption of \$50/t CO₂-e is too low.

6. Increasing the upper bound for carbon prices will also make redundant the need to have a trigger for the proposed ban on new thermal generation. MEUG also notes that given the ban is controversial, there is no certainty it will be enacted as proposed.

Generation scenarios

7. On the choice of³ “a reasonable range of credible future, high-level generation scenarios (e.g. different outcomes for generation capacity by region)” MEUG submit:

a) The Demand Side Participation Scenario is not a generation scenario. It should instead be considered as part of “a range of credible demand forecasts by region or grid exit point (e.g. high, medium and low growth).”⁴ Changes in demand side response or greater uptake of electric vehicles in the future should be tested as demand scenarios.

b) Based on recent experience with resource consent applications for large hydro projects, the South Island Surplus Scenario is not credible. There would require a substantial intervention by central government to override the concerns of local communities to change the trend of recent experience. MEUG do not believe that will be feasible.

There has been an increase in call-ins for RMA consent applications for generation projects. But that doesn't override the legitimate concerns of local communities from being heard and being taken into account; rather it collapses the usual two step process (initial hearing followed by full re-hearing on appeal) into a one hearing process. Increasing call-ins was a big step. We don't think the even bigger step of modifying the RMA or other legislation to override the balance between local and national concerns for new large scale hydro projects is feasible.

c) The purpose of the high-level generation scenarios should be to find the boundary or limits of credible scenarios. Scenarios inside the boundary are credible and outside, not credible. A scenario where a shift in any direction always leads to another credible scenario is a not a boundary scenario; it is within the credible range of scenarios. Including such a scenario in the suite of scenarios will skew the SOO.

For example assume three scenarios were on the boundary. Equalling weighting those three scenarios would give a good approximation of the credible range of possible outcomes. If a fourth scenario within the boundary were chosen and that scenario was not the same distance away from the three boundary scenarios, then weighting the four scenarios equally would skew the weighted SOO results.

MEUG suggest scenario 3: Medium Renewables is not on the boundary. Any change in the drivers of this scenario simply leads towards another credible scenario. Therefore MEUG suggest this scenario is redundant.

8. MEUG suggest an alternative set of generation scenarios based on 2 main uncertainties:

a) Will the world become more C constrained?

The driver for this will in turn depend on whether global concerns and action in response to climate change accelerates or not compared to the status quo. The main impact of more stringent global change policies will be seen as carbon prices at the upper end of current forecasts, and visa versa.

b) Will New Zealand have more thermal options?

The drivers of this uncertainty are first, whether New Zealand's future gas reserves are greater or less than the status quo. Second, whether CCS technology becomes commercial or not to enable development of known coal resources for new coal-fired plant.

³ EGR Part F, section III, rule 10.3.1.3

⁴ EGR Part F, section III, rule 10.3.1.2

If new gas reserve discoveries are higher than historic average rates of discovery and CCS technology is commercialised earlier than expected, New Zealand will have rich options for thermal generation. Alternatively, if gas discovery rates decline and CCS technology is not commercialised over the GPA analysis timeframe, New Zealand will have less thermal options.

9. The table below summarises the resulting generation scenarios using the above two drivers:

Uncertainty 1 Will the world become more C constrained?	Uncertainty 2 Will NZ have more thermal options?	Generation scenario (weighted equally)
Yes	No	C constrained world, NZ poor thermal options
Yes	Yes	C constrained world, NZ rich thermal options
No	Yes	World not emission constrained, NZ rich thermal options
No	No	World not emission constrained, NZ poor thermal options

10. The diagram below illustrates the credible region (shaded yellow) encompassed by the four generation scenarios above along with the positioning of the four EC draft scenarios (red text). The diagram illustrates the point made in paragraph 7c) above that the Medium Renewable scenario is within the feasible range and not on the boundary.

11. MEUG suggest that overall our proposed scenarios cover more of the credible range of outcomes than those in the Overview paper. In particular the Overview paper scenarios do not cover two credible scenarios. First, rates of gas discoveries are higher than historically, CCS is commercialised quickly and global concerns and action on climate change being more stringent (ie top left hand side of yellow shaded area in diagram above). Second, the world response to climate change becoming less stringent and New Zealand have less thermal options than historically (ie bottom right hand side of diagram).

Yours sincerely



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