



# MAJOR ELECTRICITY USERS' GROUP

30 March 2007

Jenny Walton  
Electricity Commission  
By email to [info@electricitycommission.govt.nz](mailto:info@electricitycommission.govt.nz)

Dear Jenny

## **Submission on Electricity Commission Reasoning in relation to intention to approve North Island Grid Upgrade Plan proposed 400 kV capable line**

1. This submission by the Major Electricity Users' Group (MEUG) provides feedback to the Electricity Commission (the "Commission") on the paper, *Reasons for Decisions set out in Notice of Intention to Approve Transpower's North Island Grid Upgrade Proposal*, ("the "reasoning paper") published 23<sup>rd</sup> February 2007. On the same date the Commission published a number of supporting reports by Commission staff and various consultants.
2. The reasoning paper sets out the detailed decision making criteria, options considered and weighting by Commissioners that formed the Notice of Intention to approve the North Island Grid Upgrade Plan (NI GUP) published 30<sup>th</sup> January 2007.
3. MEUG commissioned Dr Brent Layton, Director of the New Zealand Institute of Economic Research (NZIER) and Mr Bill Heaps, Managing Director of Strata Energy Consulting Limited (Strata) to provide independent advice on the reasoning report and other material. Attached to this submission is the report of NZIER and Strata titled, *Transpower's North Island Grid Upgrade Proposal – Analysis of the Electricity Commission's Reasons for Decisions set out in its Notice of Intention to Approve*, dated 30<sup>th</sup> March 2007.

### **The options**

4. The nomenclature used for the options considered by the Commission follows:
  - Option 1 is the "220 kV" alternative.  
This is the counterfactual assumed by both Transpower and the Commission;
  - Option 2 is the "400 kV" capable line proposed by Transpower.  
This line will operate at 220 kV for at least 20 years before being energised to 400 kV. Transpower will need to seek a further approval for works to energise the line to 400 kV. There are scenarios where the line may never be operated at above 220 kV. The Commissioners, by a majority decision, have decided to approve the 400 kV proposal subject to considering submissions;
  - Option 3 is the "duplexing" option; and
  - Option 4 is the "HTC" (high temperature conductor) option.

### Importance of this decision

5. The final decision post this consultation and the reasoning by the Commission with respect to this NI GUP is important because:

- a) It involves the largest sum for a single electricity infrastructure item in New Zealand for several decades. The 400 kV proposal if finally approved will involve approved capital work totalling \$824m.

By comparison Genesis Energy's 385 MW CCGT at Huntly (e3p) currently being commissioned has a cost of \$530m<sup>1</sup>.

- b) Confirmation of the intention to approve the 400 kV proposal may set in train a sequence of further GUP and generation investment decisions that will be substantially different compared to a decision to approve other options.
- c) The increase in transmission costs if the 400 kV proposal is approved will be material. There is no precise estimate of the increase in transmission charges because:
- i) Actual costs may differ from those approved (the numerator for calculating charges);
  - ii) The unit rate for charges also depends on future demand levels (the denominator for calculating charges);
  - iii) Final decisions by the Commission on the initial Transmission Pricing Methodology have yet to be made. There may also be changes in the methodology between the date of approving a proposal and the date the asset is commissioned and charges start to apply; and
  - iv) The final decision by the Commerce Commission on what, if any, action to take with respect to the threshold breaches by Transpower. MEUG understands Transpower has yet to suggest a settlement for the Commerce Commission to consider that, if agreeable to the Commerce Commission, would then be subject to consultation. A settlement or decision to control may affect the recovery of charges for this approved work.

Given all of these caveats an initial estimate of the likely capacity charge to recover approved capital works of \$824m is:

- \$10/kW  $\pm$  20% if recovered through interconnection charges ie socialised over all New Zealand consumers. This is equal to a 17% increase compared to current interconnection charges of \$60.45/kW; or
- \$30/kW  $\pm$  20% if recovered from consumers in Auckland and north.

These are very much back-of-the-envelope estimates for average unit costs over the initial few years of the asset. Nevertheless they help put in context the additional transmission charges consumers are likely to pay and the importance of whether incremental costs will be recovered across all consumers in New Zealand or only those that will be supplied from the new line.

Arguably if the choice is between 400 kV and 220 kV, the incremental unit charge will be some fraction of the above estimated costs.

---

<sup>1</sup> Refer Genesis Energy website, <http://www.genesisenergy.co.nz/genesis/index.cfm?98AA3A67-7E95-D748-09EE-E1FC75B59687>

- d) The choice between the options is finely balanced as evidenced by the majority rather than unanimous intention of the Commission to approve the 400 kV proposal. Hence the trade-offs and details within the reasoning need careful perusal. With the NPV between the two lowest cost options being only \$11m or a 1.6% difference, even fine tuning can change the preferred option.
  - e) There has been, ever since the departure of Roy Hemmingway and the revision to the Government Policy Statement, a sense government has been "directing" the Commission towards a certain outcome irrespective of the statutory responsibility of the Commission. The final decision needs to be clearly the best outcome for New Zealand rather than have any shadow of doubt that political considerations biased the decision.
  - f) Precedents set in the way Transpower considers options (or doesn't consider options) and the way the Commission analyses the Transpower proposals and sets out its reasoning are important as this is the first GUP to use the approval processes in Part F. Setting good precedents in this GUP is a worthwhile investment for all parties, including Transpower and the Commission, as it will improve consideration of future GUP proposals.
6. In essence what's at stake here is not just the question of whether the proposal or some other option is the best for New Zealand, but also the credibility of the Commission as the gate keeper for transmission proposals and the integrity of Transpower to reasonably consider all viable options.

#### **Demand growth in Auckland and the likelihood of generation in Auckland**

7. The Auckland economy and north of Auckland are expected to continue growing over the next few decades. These growing regional economies will need more electricity although the energy intensity per regional GPD is expected to taper off. This is consistent with the Commission reasoning. At a finer level of detail MEUG expects peak demand in Auckland relative to annual demand to reduce as those parties that cause the last MW of peak demand face more cost reflective pricing signals. Work by the Commission on the Transmission Pricing Methodology will be one of the drivers for these improved pricing signals.
8. Internationally large cities such as Auckland typically have many regionally located power stations. MEUG understands that few, if any, cities as large as Auckland are reliant on such large volumes of imported electricity to serve consumers. MEUG believe significant new generation near Auckland is inevitable. Contact Energy is very unlikely to forgo the consenting window allowing construction of Otahuhu C. As recently as last month Genesis Energy in their Interim Report for the six months ending 31 December confirmed their intention to commission a 240 MW CCGT plant in the Rodney District by 2009. This makes commercial sense for Genesis as more efficient CCGT plant closer to the largest retail market will make better use of contracted gas resources and save on losses compared to continued reliance on the older Huntly units. A new CCGT plant in Rodney also makes sense for Auckland to reduce exposure to imported power. In the view of MEUG there will probably be much more generation near Auckland capable of delaying a grid upgrade than the Commission have assumed.
9. Overall MEUG agree with the trend proposed in the draft 2007 SOO relative to the initial 2005 SOO that the long term demand in Auckland and north of Auckland will be lower and therefore the need for grid enhancement will be later. MEUG consider more generation is likely to be built in Auckland than assumed by the Commission in its reasoning; and as a result MEUG believe the need for grid enhancement can be delayed even further.

### Issues requiring investigation

10. On the basis that the Commission need not make a rushed decision, but has time to investigate issues that might change the fine balance between the 400 kV and 220 kV option in particular, MEUG suggest the following issues require investigation:

- a) Ideally this GUP proposal would have been tabled by Transpower in the context of a broader long term plan. To date there has been talk about a vision of a 400 kV grid backbone; but little detail and no promise of such as the argument was New Zealand needed to urgently get on and build an upgrade into Auckland. As noted above, the window for approving this GUP is not urgent and therefore we have an opportunity to seek from Transpower more details on the overall vision(s) for upgrades within which to consider this GUP.
- b) The Commission has previously advised that a draft decision on the related Otahuhu substation upgrade would have been available before submissions closed on the reasoning. Disappointingly we have not had an opportunity to consider that draft decision. MEUG suggest there are potentially significant synergies between this GUP and the Otahuhu substation upgrade proposal that they should have been considered together. This also lends weight to the point made in paragraph 10 a) above that we do not actually have a broad context within which to consider the GUP and therefore there is a risk of duplication, inconsistencies or gaps.

As we have time to consider a range of visions, to then select a preferred overall plan and within that have an assurance individual GUP proposals are consistent; then we should take the opportunity to implement that process.

- c) Being more precise on the required commencement date for grid enhancement. NZIER/Strata (p13) note the Commission decision on the original proposal estimated commissioning was needed by 2017 whereas the revised proposal is to be commissioned by 2013<sup>2</sup>.
- d) Will another 400 kV line be needed to meet Grid Reliability Standards?<sup>3</sup>
- e) Has the Commission adequately considered the higher consenting risks, hence higher risk of delays and higher costs, of the 400 kV proposal relative to the 220 kV alternative?<sup>4</sup>
- f) A further review of the duplexing option, including the optimisation of conductor selection.<sup>5</sup>
- g) An independent review of the security of supply policy is currently being conducted by Castalia. As part of that review one of the options that MEUG is likely to raise is the opportunity to shift Whirinaki to Auckland. As the Commission note<sup>6</sup>:

*"Moving the Whirinaki reserve energy plant to UNI would lead to a two-year delay to the next transmission line into Auckland, and would probably be higher ranked than a transmission project under the GIT."*

The Commission has time to wait for Castalia to report on this option.

---

<sup>2</sup> Refer NZIER/Strata report, section 5.4, p11

<sup>3</sup> Ibid, section 5.2, p9 and p10

<sup>4</sup> Ibid, section 5.5, p11 and p12

<sup>5</sup> Ibid, section 5.4, p10 and p11.

This option was also mentioned in the Executive Summary (p1) of the Connell Wagner report for the EC (dated 12 December 2006): "It is recognized in the context of Options 3 and 4 that it may be time consuming to undertake necessary studies for conductor optimization. On the other hand, the proposed augmentation is a highly significant infrastructure decision which warrants appropriate analysis such as a sensitivity analysis in relation to the conductors selected."

<sup>6</sup> EC, Economic Analysis of the Revised NI GUP, 23 February 2007, p31, paragraph 3.2.19

- h) Generation assumptions in Auckland<sup>7</sup> (refer also paragraph 8 above) and generation assumptions likely to give rise to the amount of electricity to be injected at Whakamaru.
- i) End consumer demand assumptions in Auckland and north and whether opportunities for peak demand reductions have been reasonably considered<sup>8</sup> (refer also paragraph 7 above).
- j) Considering if likely changes in technology might affect the results<sup>9</sup>.
- k) Paragraph 1.3.3 (p6) of the Reasoning paper sets out 3 recommendations for Transpower to consider as part of the intention to approve the GUP. It is unclear what regulatory provision the Commission is relying on to suggest conditions for an approval and how the Commission will ensure compliance by Transpower with those conditions.

Taking as an example the case where 18 months from now (ie September 2008) Contact Energy find the government has not been able to pass legislation or make other regulatory changes to assist geothermal development consent processes in the middle of the North Island. In that case Contact Energy will then proceed with Otahuhu C in order to use the existing Otahuhu construction consent window that closes around 2011. In this case would the Commission expect Transpower in meeting the conditions in paragraph 1.3.3 of the Reasoning to undertake a revised GIT to determine whether the approved GUP was still the best solution? Or what action would the EC expect Transpower to take in this case?

Some clarity around the conditions and how effective they might be is required.

- 11. In addition to the above, NZIER/Strata reported some other matters raised in their earlier paper that have not been adequately addressed (refer NZIER/Strata report, last set of bullet points in section 5.1)

#### Next steps

- 12. MEUG look forward to considering the submissions of other parties. It would be helpful if the Commission published a summary of submissions along with responses to items raised. Given the complexity of the arguments on the various issues to date, a reasonable period of time should be allowed following that critique by the Commission before a conference is held.
- 13. MEUG acknowledges assistance from both Transpower and Commission staff in meeting with or answering telephone and email inquiries by MEUG and advisors. Adequate time after a critique of submissions is published to allow a similar exchange of information would also be warranted and helpful.

Yours sincerely



Ralph Matthes  
Executive Director

<sup>7</sup> Ibid, first bullet point in the last set of bullet points in section 5.1

<sup>8</sup> Ibid, fifth bullet point in the last set of bullet points in section 5.1

<sup>9</sup> Ibid, fourth bullet point in the last set of bullet points in section 5.1