Submission on TFP and the Quality Path for Electricity Distribution Businesses

From the Electricity Networks Association

31 July 2009

Table of Contents

1. Introduction

1. This submission, from the Electricity Networks Association (ENA), is in response to the Commerce Commission's paper on the Reset of the DPP for Electricity Distribution Businesses (Reset Paper) [1] with respect to two issues outstanding in our submission of 17 July; total factor productivity (TFP), and the setting of the quality path.

2. In our 17 July submission we indicated we would be submitting on these two issues once work the ENA had commissioned was complete and the ENA Board had an opportunity to consult with ENA members on it. ENA membership includes all 29 electricity distribution businesses (EDBs), exempt and non-exempt, to which various aspects of Part 4 apply.

3. The two areas of TFP and setting the quality path require expert and highly technical input. The ENA engaged Pacific Economics Group (PEG) to advise it on TFP issues, and Statistical Research Associates (SRA) on setting the quality path. Their respective reports are attached and form part of this submission.[2]

4. ENA members unanimously support this submission.

5. The ENA is happy to make its advisers available to Commission staff or to Commissioners should you wish to query or discuss any aspect of this submission.

6. ENA's contact person for this submission is:

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[1] *Reset of the default price-quality path for electricity distribution businesses*, 19 June 2009, Commerce Commission,

[2] These report are respectively *X factor recommendations for New Zealand electricity distribution price controls*, Pacific Economics Group, July 2009; and *Comments on Chapter 8 of the Commerce Commission Discussion Paper Reset of Default Price-Quality Path for Electricity Distribution Businesses (19 June 2009)*, Statistics Research Associates Ltd, 30 July 2009

2. Total factor productivity

7. The ENA commissioned PEG to critique the Economic Insights proposed approach to TFP[3] and its application to setting the "X" as a component of the DPP, and to develop an alternative consistent with the purpose of Part 4 and the Commission's implementation principles. PEG's recommended alternative approach is attached, which the ENA and its members recommend to the Commission.

8. The ENA indicated, in its 17 July submission, its concern with the direction the Commission is taking with regard to the development of TFP analysis. The Economic Insights material appears to us to be more suited to academic research than to the task at hand. Previous attempts by the Commission to use experimental TFP analysis to inform the setting of C1 and C2 factors have lacked credibility and in practice produced very volatile results (i.e. EDBs shifting from one end of the rankings to the other). The ENA considers it inappropriate, and unnecessary, to take a similar path again in this area.

9. Further, the ENA submits that the TFP proposals contained in the Reset Paper and the Economic Insight papers are presented in a manner that is not suitable for consultation purposes. EDBs are unable to effectively respond to the proposal as the actual model that would be used is still under development and insufficient information was provided to assess the impact of it. To date no estimate of the result of using the proposed model has been provided, despite a draft Decision Paper being due from the Commission in about a month.

10. The ENA considers the PEG approach is consistent with the Commission's implementation principles as follows:

    - Consistency: the PEG approach can be implemented consistently across all EDBs and through time. PEG's approach towards TFP measurement is also consistent with economic theory, regulatory precedent elsewhere and the methods used to estimate TFP by government agencies. This approach has a track record that demonstrates it is able to achieve consistency (the Economic Insights' proposed approach does not).
    - Flexibility: this is "*to improve certainty and predictability for businesses, thereby promoting efficient infrastructure investment. However, as far as is practicable, regulatory decisions should take into account both prevailing market conditions and those that can reasonably be expected in the future,*

[3] As set out in the two Economic Insights papers, *The theory of network regulation in the presence of sunk costs,* 8 June 2009; and *Asset valuation and productivity–based regulation taking account of sunk costs and financial capital maintenance,* 11 June 2009

including any technological progress." (paragraph 69 of the Reset Paper). PEG's approach would promote certainty and predictability for businesses, since it has a strong foundation in established methods and the most recent data available. PEG has used these methods and data to set objective bounds on a reasonable range for the X factor, where both the upper and lower bounds for X are based directly on the results of rigorous empirical research. At the same time, PEG has considered the impact of recent industry and economic trends, and used this analysis to refine the range for an acceptable X factor for the DPP. PEG's analysis of broader economic conditions can also inform the Commission's thinking and the appropriate exercise of its discretion in choosing a particular value from within the X factor range. The ENA believes that PEG's approach appropriately balances the use of disciplined, rigorous methods for estimating TFP with the need to apply empirical results flexibly and with appropriate weighting of current economic conditions.

- Cost-effectiveness: the costs of implementing this approach for this Reset of the DPP would be low, and would continue to be in future Resets. There is a track record of the costs of implementation in other jurisdictions (e.g. in the state of Victoria, Australia). The costs of completing and implementing the Economic Insights' approach are unknown (at least to the ENA).

- Transparency: the approach is based on widely agreed economic concepts, has been exposed to critique and yet approved by regulators in other jurisdictions, and uses data that are publicly available. We find the Economic Insights' approach opaque, and the Commission itself acknowledges that some aspects of this approach are "new and untested." The ENA understands certain elements of the Economic Insights' TFP specification have recently been debated in at least one overseas jurisdiction (the Canadian Province of Ontario). In that instance, the regulator rejected Economic Insights' proposals and accepted PEG's alternative.

11. The PEG report explains the consistency of the model design with the "workably competitive" criterion in the purpose statement of Part 4.

12. The ENA submits there are at least three reasons to suggest the Commission should choose a point estimate for "X" from the lower end of the band recommended by PEG (0.19% to -0.63%), namely:

    - the unlikelihood that the high TFP growth observed immediately subsequent to the separation of network and retail/generation businesses in 1999 to 2001 reflects trend growth going forward.

    - due largely to the financial turmoil, economic growth in New Zealand is forecast to be much lower over the next five years than that experienced over the study period (1999 – 2008). EDBs are expecting lower growth rates for demand for their services over the forthcoming regulatory period,

which can be expected to convert into lower TFP growth rates over this period compared to the study period.

- many EDBs are in an unusually large capital expenditure phase. The effects of this are reflected in PEG's results for industry TFP growth since 2004, which has been zero or negative (see Table 6).

13. The ENA will submit early next week PEG's critique of the Economic Insights approach as a stand alone report.

3. Setting the quality path

14. The ENA commissioned SRA to critique the Commission's proposed approach to setting the quality path and to develop an alternative, consistent with the Commission's implementation principles. The result of this work is attached, which the ENA and its members recommend to the Commission, as it addresses the issues associated with establishing a robust, statistically sound regime for measuring "material deteriorations in performance".

15. In the view of the ENA, the recommendations contained in the SRA paper are consistent with the Commission's stated principles of:

- Consistency: the recommendations identify a means of treating each EDB on the same basis, whereas the Commission's preliminary proposals (particularly relating to the use of the IEEE 2.5 beta approach, the assumption of log-normality for establishing MEDs[4] and uncertain approach to dead-bands) would lead to inconsistent treatment of EDBs. Under the Commission's preliminary proposals some EDBs would be more likely to breach for reasons unrelated to their actual performance.
- Flexibility: the recommendations have the inbuilt flexibility of adapting the measurement of performance to the statistical properties of each EDB's performance data.
- Cost-effectiveness: the proposals can be readily implemented at low cost and provide a clear basis for calibrating the risk that the quality path results in "false-positives": i.e., the number of EDBs who breach the quality targets, but whose underlying performance has not actually deteriorated (the incidence of false positives is a key source of cost in the implementation of the quality path).

[4] Major Event Days

- Transparency: the proposed approaches would provide a transparent statistical basis, based on methodological rigor and accepted statistical practices for setting quality performance targets and assessing performance.

16. While the SRA report provides a sound basis for setting statistically based performance targets and assessing compliance, ENA also notes that it will be important that the Commission understands the practical limits on statistical approaches to deal with every issue that might confront EDBs.

17. It will be important that there is a robust and predictable process for dealing with any breaches of the quality path and that EDBs have appropriate opportunities to identify additional relevant factors impacting on their performance. For example, following MEDs there are often a number of latent defects arising from the MED that only become apparent in subsequent inspections, or where networks have to undertake further planned or unplanned outages in order to make permanent repairs. These kinds of outage events are not taken into account in the MED corrections, but may be relevant to networks that have experienced higher than usual MEDs. It would be appropriate for the Commission to address these issues in its Enforcement Guidelines, and the ENA would welcome the opportunity to provide further insights to the Commission on the nature of these implementation issues.