

22 December 2010

Mr John Pierce  
Chairman  
Australian Energy Market Commission  
PO Box H166  
AUSTRALIA SQUARE NSW 1215

Dear John,

**AEMC Review into the use of total factor productivity for the determination of prices and revenues – Draft Report**

**1. Introduction and overview**

Grid Australia welcomes this opportunity to comment on the Commission's Draft Report on its review into the use of total factor productivity (TFP) for the determination of prices and revenue. Grid Australia appreciates the substantial analysis undertaken by the Commission, and the highly consultative approach adopted by the Commission since the review commenced.

Throughout the review, Grid Australia's principal message is that TFP is not suitable for application to transmission regulation for three main reasons:

- the lumpy nature of transmission investment;
- difficulties in transmission output measurement, particularly in relation to reliability; and
- the different geographical and physical characteristics of our networks.

The Commission has consistently shared Grid Australia's concerns regarding the applicability of TFP-based regulation to the transmission sector. For example, in its December 2008 Framework and Issues Paper the Commission commented that:

*"...there are serious questions about the suitability of applying a TFP based methodology to determine the revenue path of electricity transmission service providers. For these reasons, the existing building block approach may better accommodate situations where the investment profile is lumpy and uncertain because prices and revenues are more closely tied to a business's own cost base."<sup>1</sup>*

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<sup>1</sup> AEMC, *Framework and issues paper*, 12 December 2008, page 33.

Grid Australia's previous submissions highlighted that the Commission has only relatively recently completed a detailed and wide-ranging review of the regulatory arrangements for electricity transmission.<sup>2</sup> In that determination, the Commission concurred with the Expert Panel's earlier conclusion that the case for TFP "appears less compelling in electricity transmission, where significant lumpiness of future capital expenditure demands is an important part of the industry landscape."<sup>3</sup> Against this background, Grid Australia welcomes the Commission's conclusion in its Draft Report that 'it appears unlikely' that it would be appropriate to implement a TFP methodology for the electricity and gas transmission sectors. It is disappointing, however, that the Draft Report continues to treat TFP-based regulation as a possible option for electricity transmission.

A related concern is that the Commission's recommendations to the MCE fail to differentiate between the transmission and distribution sectors, even though the prospects for successfully applying TFP-based regulation to the sectors differ markedly. As explained in this submission, Grid Australia considers that the Commission's recommendations in relation to data collection should take into account the particular challenges of applying TFP-based regulation to the transmission sector.

The remainder of this submission follows the structure of the Commission's Draft Report by commenting on:

- the Commission's assessment of TFP-based regulation against the national energy objectives; and
- the conditions needed to support the application of a TFP methodology.

The paper concludes with Grid Australia's proposed approach to data specification, which differs from the approach adopted by the Commission's Draft Report.

## **2. Assessment of a TFP-based methodology against the national energy objectives**

The Commission's assessment of TFP-based regulation has been informed by spreadsheet modelling undertaken by Economic Insights. The approach seeks to compare the profitability and pricing outcomes from building block and TFP-based regulation. Grid Australia has previously commented on some aspects of Economic Insights' analysis and conclusions.

Grid Australia does not intend to repeat its earlier submission on the detail of Economic Insights' modelling. However, Grid Australia would like to reiterate that the modelling may give the false impression that TFP-based regulation is more predictable and stable than is actually the case.<sup>4</sup>

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<sup>2</sup> AEMC, *Rule Determination, National Electricity Amendment (Economic Regulation of Transmission Services)*, Rule 2006 No. 18, 16 November 2006.

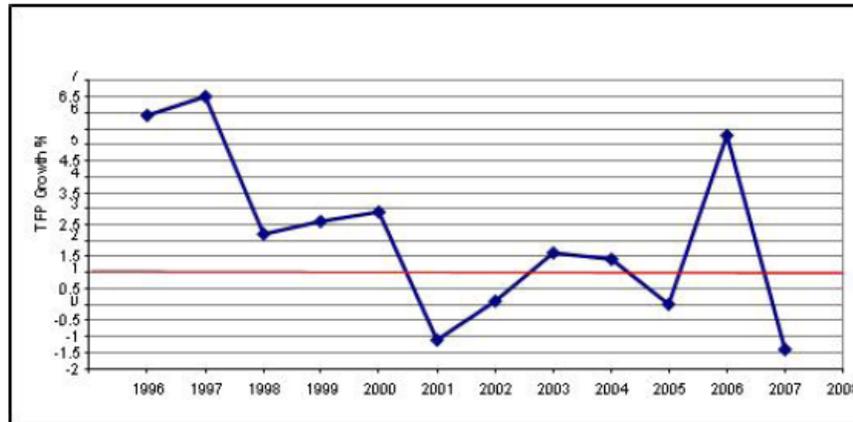
<sup>3</sup> Ibid, page 40.

<sup>4</sup> Please refer to Grid Australia's supplementary submission (dated 5 October 2010) on the Economic Insights TFP Modelling for more detailed discussion of this.

To illustrate this observation, Grid Australia notes that the Draft Report comments on a TFP study commissioned by the Essential Services Commission in Victoria<sup>5</sup> as follows:

*“The energy network industries tend to be characterised by relatively stable production conditions, although innovation or productivity improvements can be unpredictable and erratic at times. It is important to assess whether erratic year-to-year changes in measured TFP are due to problems with the TFP specification used or with the quality of the data used. The ESC’s TFP results for Victoria show considerable year-to-year variability as illustrated [in Figure 4.2] below.”*

**Figure 4.2 Annual TFP growth for the Victorian electricity distribution industry, 1996 to 2008**



ESC & PEG, TFP research for Victoria’s power distribution industry: 2007 update, December 2008.

In relation to the erratic nature of the TFP results for the Victorian electricity distribution companies, the Draft Report recognises the possibility of specification error.

*“In its submission PEG noted that the impact of erratic year-to-year movements in measured TFP will be reduced once an average growth rate spanning several years is formed and the impact on a resulting price path will be considerably less volatile than indicated by year-to-year movement in the TFP index. While this is true, it remains the case that erratic year-to-year movements may point to specification and/or data problems.”<sup>6</sup>*

Given the potentially erratic nature of the TFP study in Victoria, Grid Australia questions the Commission’s conclusions that TFP-based regulation is a less risky alternative to building block regulation:

*“Relatively small errors in forecasts in building block regulation can lead to significant divergences of realised revenue from actual revenue requirements which means TFP-based regulation has the potential to be a less risky alternative compared to building block regulation under normal circumstances.”<sup>7</sup>*

<sup>5</sup> Australian Energy Market Commission, *Draft Report: Review into the use of total factor productivity for the determination of prices and revenues*, 12 November 2010, page 84.

<sup>6</sup> Ibid, page 85.

<sup>7</sup> Ibid, page 18.

For the reasons outlined above, Grid Australia does not regard the spreadsheet models as providing clear evidence to support the Commission's conclusions. From Grid Australia's perspective, the significant challenges in developing a stable and robust TFP measure for transmission networks means that TFP-based regulation is inherently more risky than the current building block regime.

In summary, Grid Australia is concerned that the Commission's Draft Report overstates the potential benefits of TFP-based regulation compared to the current building block regime. This is particularly the case in relation to transmission networks, where the challenges in designing the TFP measure cannot readily be resolved. Grid Australia considers that the erratic year-to-year changes in measured TFP in the Victorian study commissioned by the Essential Services Commission provides an important counter-balance to the modelling undertaken by Economic Insights.

### **3. Conditions needed to support the application of a TFP methodology**

The Commission has identified a number of conditions that must be met to support the application of TFP-based regulation. These conditions are summarised below:

- whether there is data currently available that is suitable for a TFP methodology;
- whether a TFP index is able to accurately reflect the industry's productivity growth and if so under what criteria;
- whether a TFP index can be influenced by service providers;
- if the service providers within the industry group have comparable expectations of productivity growth;
- whether a TFP index is a good estimate of future productivity growth; and
- the stability of the TFP index over time.

The Draft Report concludes that:

*"It is likely to be appropriate to implement a TFP methodology in the electricity and gas distribution sectors, but sufficiently robust data-sets would be needed to confirm whether necessary conditions exist and to assist in forming industry groups."<sup>8</sup>*

*"It appears unlikely that it would be appropriate to implement a TFP methodology for the electricity transmission sector because of difficulty in measuring outputs related to system security and reliability, the lumpiness of capital expenditure and given the small number of service providers. All service providers would need to be comparable to form one industry group and data is needed to test whether this is the case. We also note that there is little, if any, international experience with applying a TFP methodology to electricity transmission. It is, however, important to improve data collection within the electricity transmission sector to allow these issues to be tested more fully. This will also have wider benefits for other regulatory processes including the application of the building block approach."<sup>9</sup>*

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<sup>8</sup> Ibid, page 62.

<sup>9</sup> Ibid, page 88.

Grid Australia supports the Commission's proposed conditions and its conclusions regarding the likely applicability of TFP-based regulation to the distribution and the likely unsuitability to the transmission sector. Importantly, however, Grid Australia considers that it is not necessary to collect data in order to conclude that TFP-based regulation should not apply to the transmission sector. As explained in further detail below, Grid Australia also questions the Commission's view that data collected for TFP-based regulation can and should be used for building block regulation.

Grid Australia notes the following difficulties in attempting to apply TFP-based regulation to the electricity transmission sectors:

- A TFP index will not be able to accurately reflect the industry's productivity growth because of the problems associated with lumpy transmission investment and the difficulties in measuring service outputs, including, most notably, network reliability;
- A TFP index can be influenced by individual service providers, noting the Commission's observation that Powerlink and TransGrid each hold approximately 30% of the total regulated asset base in the electricity transmission sector<sup>10</sup>; and
- Service providers are likely to have different expectations regarding future productivity growth as regionally distinct transmission networks are likely to exhibit different investment and output cycles.

In light of the above observations, Grid Australia welcomes the Commission's view that it is 'unlikely' that it would be appropriate to implement a TFP methodology for the electricity transmission sectors. However, Grid Australia considers that the weight of evidence against the application of TFP-based regulation for electricity transmission – including the absence of this form of regulation in other countries – should have led the Commission to adopt a stronger conclusion. In particular, given the considerations noted above, the case has not been demonstrated that it is necessary to collect additional data to test whether TFP-based regulation should be applied to this sector.

Grid Australia also questions the conclusion that the collection of data to develop a TFP index for electricity transmission will have wider benefits for other regulatory processes including the application of the building block approach. The Commission comments as follows in relation to this issue:

*"That is, even if a TFP methodology is not ultimately included in the NER or NGR or, if the methodology is not selected by service providers, the collection of relevant, robust data using consistent definitions is an important part of cost effective economic regulation. Reliable and useful data will go some way to addressing the information asymmetry problem that regulators face under the building block approach. This is consistent with improving regulatory practice and achieving the efficiency potential of incentive regulation. This will, in turn, provide both end-users of the regulated services and service providers with greater confidence that prices reflect efficient costs over the long term. Therefore, transmission service providers must also be included in this reporting requirement.*

*For these reasons, we advise that the reporting requirements also apply to transmission service providers as well as distribution service providers. Although we found that it is unlikely to be appropriate to implement a TFP methodology in the transmission sectors, the issues with the building block approach identified during this Review apply equally to both transmission and distribution. Therefore the developing of robust and transparent*

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<sup>10</sup> Ibid, page 88.

*regulatory data sets for transmission will potentially improve the application of economic regulation in these sectors as well.*<sup>11</sup>

Whilst the Commission's conclusion appears at first sight to be uncontroversial, it is important to examine practically how the TFP index would inform the AER's decision-making under Chapter 6A (and Chapter 6) of the Rules. In particular, Grid Australia notes that:

- The Rules provision relating to the benchmarking of operating and capital expenditure is 'one of ten factors the AER must have regard to in assessing' a company's proposed expenditure.<sup>12</sup> The Rules would therefore give limited weight to a TFP index, assuming that the TFP index could be regarded as a form of industry benchmarking.
- It is important to note that TFP measures total factor productivity, which relates to the overall productivity of the company. In contrast to this holistic measure, the Rules provide separate, specific criteria for the AER to apply in deciding whether to approve a company's operating and capital expenditure forecasts. Given these specific criteria, it is unclear how a TFP index would assist the AER in its review of a TNSP's operating and capital expenditure forecasts. For example, even if a TFP index were decomposed into partial factor productivity measures for operating and capital expenditure, it is unclear how such a measure relates to the expenditure criteria in the Rules.
- For the reasons highlighted above, there is a strong likelihood that the TFP index will not be sufficiently robust to be applied for revenue-setting purposes in the electricity transmission sector. Given this strong likelihood, it is reasonable to conclude that the TFP-index should not be used by the AER to inform its building block decisions in the electricity transmission sector.
- The AER would need to ensure that it has consistently prepared robust data to inform its building block decisions. However, given the material differences between building block and TFP-based regulation it is highly unlikely that the same data would be required for both forms of regulation. Grid Australia considers, therefore, that it would be inefficient and inappropriate to collect data for TFP-based regulation, in the knowledge that it is unlikely to be applicable to building block regulation.

Grid Australia recognises the importance of providing the AER with the level and quality of information that is necessary to support the application of the building block regime. In this regard, Grid Australia considers that the data currently provided by TNSPs is appropriate for the purposes of the building block regime. For example, the AER currently collects substantial information through the TNSPs' annual reports and regulatory accounts. This information includes a wide range of financial data; information on service performance and updated demand forecasts. In addition, the AER already has substantial powers to collect the information that it considers necessary to support the revenue-setting process (which may include benchmarking information). The AER has established Information Guidelines for this purpose.

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<sup>11</sup> Ibid, page 95.

<sup>12</sup> AER, *Final Determination, Appendices, Victorian Electricity Distribution Network Service Providers 2011-2015*, October 2010, page 97.

In summary, Grid Australia does not share the Commission's view that data collected for TFP-based regulation should inform the AER's application of the building block regime. Grid Australia's view is that TFP-based and building block regulation should be regarded as standalone regimes. It is not necessary or appropriate to mix the regimes either in terms of their application or data collection. Most importantly, for electricity transmission the evidence shows that TFP-based regulation will not satisfy the conditions set by the Commission. The strength of this evidence has implications for the Commission's proposed approach to data collection, which is addressed below.

#### **4. Grid Australia's proposed approach to data specification**

Grid Australia has consistently supported the Commission's two stage approach to its review of TFP-based regulation. The Commission's approach recognises that important issues regarding the design, specification and application of TFP-based regulation will need to be resolved at the next stage, providing that the conditions to support TFP-based regulation are in place.

As noted above, Grid Australia is disappointed that the Commission continues to treat TFP-based regulation as an option for electricity transmission. Grid Australia considers that all the available conceptual and practical evidence point to serious weaknesses in the regime for electricity transmission networks in Australia. Grid Australia maintains its view that the Commission's Final Report should conclude that TFP-based regulation is not suitable for the electricity transmission sector. Grid Australia cannot support data collection for electricity transmission in circumstances where it is evident that the conditions established by the Commission are unlikely to be satisfied.

However, if the Commission's Final Report concludes that the suitability of TFP-based regulation to the transmission sector should be subject to further testing, then the Commission's current data specification approach should be modified to appropriately recognise the much lower probability of success for the transmission sector. In particular, in these circumstances the following would be a more appropriate data specification approach:

- (a) The working group should first determine the data specification for TFP-based regulation for distribution network companies. This approach will allow the transmission sector to be treated separately, whilst building on the findings of the working group for the distribution sector.
- (b) A pre-condition would apply to the data collection for the transmission sector. This pre-condition would require the AER to demonstrate that a suitable data-set could be developed and that there is a strong likelihood that the Commission's conditions are likely to be satisfied. In particular, the data-set would need to include an appropriate measure of network reliability, as this is an important output for the electricity transmission sector.
- (c) The AER will determine at the data specification stage whether the specified data is likely to produce a TFP-index which is capable of satisfying the Commission's conditions. The AER would only collect the data if it considered that the Commission's conditions are likely to be satisfied.

Grid Australia considers that the above approach is more likely to promote the National Electricity Objective and, therefore, should be adopted by the Commission in its Final Report. In particular, Grid Australia's proposed approach would:

- provide a more focused and efficient approach to data specification; and

- reduce the risk that TFP-data will be collected for the transmission sector in circumstances where it is obvious at the data specification stage that the Commission's conditions are unlikely to be satisfied.

Grid Australia looks forward to further opportunities to engage with the AEMC and stakeholders in the relation to this review. If you require any further information from Grid Australia, please do not hesitate to contact me on 08 8404 7983.

Yours sincerely,



Rainer Korte  
**Chairman**  
**Grid Australia Regulatory Managers Group**