



Australian Energy Market Commission

**RULE  
CHANGE**

## **RULE DETERMINATION**

### National Electricity Amendment (Total Factor Productivity for Distribution Network Regulation) Rule 2011

**Rule Proponent(s)**

Minister for Energy and Resources (Victoria)

**Commissioners**

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22 December 2011

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For and on behalf of the Australian Energy Market Commission

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## **About the AEMC**

The Council of Australian Governments, through its Ministerial Council on Energy (MCE), established the Australian Energy Market Commission (AEMC) in July 2005. The AEMC has two principal functions. We make and amend the national electricity and gas rules, and we conduct independent reviews of the energy markets for the MCE.

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## Summary of final rule determination

On 18 June 2008, the Victorian Minister for Energy and Resources submitted a rule change proposal to amend the National Electricity Rules (NER) to allow the use of a methodology based on total factor productivity (TFP), for the setting of electricity distribution network pricing and revenue. This would operate as an alternative in pricing determinations to the current methodology based on the 'building block approach'.

A TFP methodology tracks industry-wide productivity and sets a revenue allowance for a business based on how it performs in comparison to a measured productivity trend. The proposal sought to permit the option of a TFP-based methodology for electricity distribution determinations and requested that this be made available in time for the next Victorian revenue reset process.

Following its review of submissions provided in response to the first round of consultation, the Australian Energy Market Commission (AEMC or Commission) decided to delay the rule change while it conducted a wider review of TFP (TFP review). The final report of this review, entitled *Review into the use of total factor productivity for the determination of prices and revenues* (final TFP report) was published in July 2011.

The Commission has decided not to make a draft rule in response to the rule change request. This is because the Commission has taken the view that the necessary conditions for applying a TFP methodology are not present at the current time. In particular, a sufficiently robust and consistent data-set to support TFP does not yet exist. This underlying data is critical to assessing the merits of adopting a TFP methodology, and is also needed to determine if other pre-conditions for a TFP methodology have been met.

The Commission considers that a more appropriate way to approach the introduction of a TFP methodology would be as proposed in the final TFP report, that is, by starting with the gathering of data. Rules that would facilitate this data collection exercise have been proposed by the Commission as part of the final TFP report, and are currently being considered by the Ministerial Council for Energy.

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# 1 Rule change request

## 1.1 The rule change request

On 18 June 2008, the Minister for Energy and Resources (Victoria) (Proponent) made a request to the Australian Energy Market Commission (AEMC or Commission) to make a rule to allow the use of a total factor productivity (TFP) methodology as an alternative economic regulation methodology for electricity distribution price reviews (rule change request).<sup>1</sup> This would be available to be applied by the Australian Energy Regulator (AER) in making determinations for electricity distribution network service providers.

## 1.2 Rationale for rule change request

In the rule change request the Proponent sought to implement an alternative to the building block approach which is currently used for the economic regulation of network businesses. Under the current building blocks method, as prescribed by the National Electricity Rules (NER),<sup>2</sup> the AER estimates the efficient level of prices by assessing information and forecasts specific to each individual service provider.

By contrast, a TFP methodology measures how businesses, industries or regions use all of the inputs in their production processes to produce outputs which are valued by customers. Instead of an assessment of business-specific costs, the regulator links the annual change in prices to estimates of the industry TFP growth.

The Proponent identified several benefits that would flow from adopting a methodology for economic regulation which does not rely on firm-specific forecasts of costs and demands. The principal benefit is an increase in the efficiency of the regulatory process. The Proponent stated that many of the difficult and adversarial issues which the AER faces in making electricity distribution price review decisions under the building block approach are based on the need to estimate firm-specific costs and demands. The information asymmetry between the regulator and regulated body makes this a challenging task.<sup>3</sup>

A secondary benefit noted by the Proponent is the possibility of extending the regulatory control period. This is because the method for setting the price trajectory under a TFP methodology makes greater use of 'known and measurable' information, rather than firm-specific forecasts of expenditure and demand. As a result the AER should be less concerned that accepting a longer regulatory control period would

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1 Minister for Energy and Resources (Victoria), *Proposed rule change to the Australian Energy Market Commission to permit the use of the 'TFP approach'*, May 2008.

2 See clause 6.4.3 of the NER.

3 Minister for Energy and Resources (Victoria), *Proposed rule change to the Australian Energy Market Commission to permit the use of the 'TFP approach'*, May 2008, p. 5.

permit inappropriate windfall gains to accrue which should, in turn, strengthen the incentives on the regulated businesses to minimise costs.<sup>4</sup>

### **1.3 Solution proposed in the rule change request**

The rule change request proposed the following:<sup>5</sup>

- electricity distribution businesses would be able to request the AER to change the methodology for that business from the building block approach to a TFP methodology;
- the AER would issue guidelines on such matters as its methodology for setting an initial starting price and how it intends to apply TFP;
- the AER would apply a threshold test to determine whether TFP should be used; it could only be applied where industry-wide productivity growth is a reasonable proxy for a firm's future productivity growth (without adjustments for the specific circumstances of the business);
- the AER would also be required to apply a calculation objective to ensure the TFP methodology could be applied in a consistent manner and that the allowed price path would be likely to track expected costs;
- the starting regulatory asset base of a business (as determined using the building block approach) would be used to set initial prices;
- cost-based price-reviews would occur at regular intervals and the AER would determine the length of the regulatory control period;
- there would be no earlier reviews (sometimes called 'off-ramps') triggered by earnings falling outside a prescribed band;
- one X-factor would be used industry-wide, which could be set on either a fixed or rolling basis; and
- a business for which a TFP methodology is being applied could only revert to the building block approach with the consent of the AER.

### **1.4 Relevant background**

The rule change request drew on previous work in relation to energy access pricing undertaken by the Expert Panel on Energy Access Pricing. This Panel was established by the Ministerial Council on Energy in December 2005 and it issued a *Report to the Ministerial Council on Energy* in April 2006 (the Expert Panel report).

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<sup>4</sup> Minister for Energy and Resources (Victoria), *Proposed rule change to the Australian Energy Market Commission to permit the use of the 'TFP approach'*, May 2008, pp. 6 and 39-40.

<sup>5</sup> Rule change request, page 13.

This report considered in some detail the relative merits of the building block approach compared to TFP, and concluded that a TFP-based price control setting method does have the potential to bring about a reduction in the costs of regulation. This was subject to certain qualifications, however, which included that use of TFP depends on the availability of long term, reliable information on outturn costs of supply, and that TFP offers the greatest benefit for a business or industry which is in a relatively steady state.<sup>6</sup>

## 1.5 Commencement of rule making process

On 24 July 2008, the Commission published a notice under section 95 of the National Electricity Law (NEL) advising of its intention to commence the rule making process and the first round of consultation in respect of the rule change request. Submissions closed on 22 August 2008.

The Commission received eleven submissions on the rule change request as part of the first round of consultation. They are available on the AEMC website.<sup>7</sup>

## 1.6 Market review

Submissions provided as part of the first round of consultation commented, amongst other things, that due to the breadth of the topic a rule change process was not the appropriate forum to address the issue of TFP, and that it could not have been completed in time for the subsequent Victorian electricity distribution price review decisions. Instead, it was suggested that the Commission should conduct a review on the issue.

On 21 November 2008 the Commission initiated a review entitled *Review into the use of total factor productivity for the determination of prices and revenues* (TFP review). This review covered gas and electricity transmission and distribution sectors, with the objective of providing advice on:

- whether there would be circumstances in which the application of a TFP methodology could contribute to the National Electricity Objective (NEO) and the National Gas Objective (together, the national energy objectives); and
- possible rules to implement TFP.

The final report of the TFP review was published on 7 July 2011 (final TFP report). It concluded that the application of TFP as an alternative to the building block approach could lead to increased productivity and lower prices for consumers in the long term, and therefore could contribute to the national energy objectives. However, it also concluded that a number of conditions need to be met for TFP to work properly, and such conditions are not met at the present time.

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<sup>6</sup> Expert Panel on Energy Access Pricing, *Report to the Ministerial Council on Energy*, April 2006, at pages 103-105.

The Commission proposed a two-stage rule process for changes to the NER and the National Gas Rules. It proposed a series of changes in the first stage which would provide for the collection of data which would, in turn, allow the AER to test whether conditions for a TFP methodology had been met. Drafting of the detailed design of a TFP methodology in the second stage would only occur once such conditions had been met.

## **1.7 Extensions of time**

Following the initiation by the AEMC in November 2008 of the TFP review, the timing for publication of the draft rule determination was extended under section 107 of the NEL on three occasions:

- on 27 November 2008, the AEMC published a notice under section 107 of the NEL extending the time period for making the draft rule determination to 31 December 2009;
- on 23 July 2009, a further notice was published extending the time period to 1 October 2010; and
- on 30 September 2010, another notice extended the time period to 1 October 2011.

As required by section 108A of the NEL, the Commission published a report in July 2009 setting out the reasons why the final rule determination in respect of the rule change request had not been made within 12 months of the publication of the notification of the commencement of the rule change process.

## **1.8 Publication of draft rule determination**

On 29 September 2011 the Commission published a notice under section 99 of the NEL advising of the publication of a draft rule determination and seeking submissions from stakeholders.

Submissions on the draft rule determination closed on 10 November 2011. The Commission received six submissions which are available on the AEMC website.<sup>8</sup> A summary of the issues raised in the submissions, and the Commission's response to each issue, is contained in Appendix A1.

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7 [www.aemc.gov.au](http://www.aemc.gov.au)

8 [www.aemc.gov.au](http://www.aemc.gov.au).

## **2 Final rule determination**

### **2.1 Commission's determination**

In accordance with section 102 of the NEL the Commission has determined not to make the rule proposed in the rule change request (proposed rule).

The Commission's reasons for making this final rule determination are set out in section 2.4.

### **2.2 Commission's considerations**

In assessing the rule change request the Commission considered:

- the Commission's powers under the NEL to make the rule;
- the rule change request;
- the fact that there is no relevant Ministerial Council on Energy (MCE) statement of policy principles;<sup>9</sup>
- submissions received during the first and second rounds of consultation;
- the revenue and pricing principles under section 7A of the NEL;
- the Commission's analysis and the outcomes of the final TFP report; and
- the Commission's analysis as to the ways in which the proposed rule will or is likely to, contribute to the NEO.

### **2.3 Commission's power to make the rule**

The Commission is satisfied that the proposed rule falls within the subject matter about which the Commission may make rules. The proposed rule falls within section 34 of the NEL as it relates to section 34(1)(a)(iii), which sets out that the Commission may make rules with respect to the activities of persons (including registered participants) participating in the National Electricity Market (NEM) or involved in the operation of the national electricity system.

Further, the proposed rule falls within the matters set out in schedule 1 to the NEL as it relates to item 26J, because that item specifically deals with TFP as a regulatory economic methodology that can be applied by the AER, or else as a tool to inform the AER's application of the building block approach.

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<sup>9</sup> Under section 33 of the NEL the AEMC must have regard to any relevant MCE statement of policy principles in making a Rule.

## 2.4 Rule making test

Under section 88(1) of the NEL the Commission may only make a rule if it is satisfied that the rule will, or is likely to, contribute to the achievement of the NEO. This is the decision making framework that the Commission must apply.

The NEO is set out in section 7 of the NEL as follows:

“The objective of this Law is to promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers of electricity with respect to:

- (a) price, quality, safety, reliability and security of supply of electricity;  
and
- (b) the reliability, safety and security of the national electricity system.”

For the rule change request, the Commission considers that the relevant aspect of the NEO is promoting efficient investment in electricity services with respect to the price of electricity.<sup>10</sup> The Commission also had regard to the regulatory impact of the proposed rule on the efficient operation of electricity services, for the long term interests of consumers of electricity.

Implementing a TFP methodology as an alternative to the current building block approach could lead to increased productivity and lower prices for consumers in the long term. Therefore such a methodology could in principle contribute to the NEO in terms of incentives for businesses to pursue cost efficiencies while allowing businesses to recover their efficient costs. The effect of information asymmetries would be reduced, potentially allowing for longer regulatory control periods. There are likely to be other advantages associated with a TFP methodology including improved regulatory practice and reduced regulatory costs.

However, the Commission is not satisfied that this proposed rule will, or is likely to, contribute to the achievement of the NEO because, as concluded in the final TFP report:

- in the absence of a robust, long-term data-set the necessary conditions for the implementation of a TFP methodology are not present; and
- as a result, it is not possible to tell whether permitting a TFP methodology, including the one described in the proposed rule, would lead to increased productivity and therefore more efficient investment in electricity services with respect to price.

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<sup>10</sup> Under section 88(2), for the purposes of section 88(1) the AEMC may give such weight to any aspect of the NEO as it considers appropriate in all the circumstances, having regard to any relevant MCE Statement of Policy Principles.

### 3 Commission's assessment approach

This chapter describes the assessment framework that the Commission applied to assess the rule change request in accordance with the requirements set out in the NEL (and explained in chapter 2).

As described above, in assessing the rule change request the Commission had regard to the NEO. This encompassed not only the price at which services are provided, but also the quality, reliability, safety and security of the energy network systems. It also covered the principles of good regulatory design and practice in order to promote stability and predictability of the regulatory framework, minimise operational interventions in the market, and promote transparency.

Against this background the Commission identified criteria which could be used to assess the TFP methodology proposed by the Proponent. This was to identify whether implementing the TFP methodology would contribute to the NEO, against the counterfactual of the current building block approach. These criteria, which were also applied as the assessment framework in the review, are as follows:<sup>11</sup>

1. cost incentives - the strength of the incentives on the network service provider to pursue cost efficiencies and the extent to which such cost efficiencies are shared with end-users; and
2. investment incentives - the ability of the framework to ensure efficient investment to promote long term innovation and technical progress for the benefit of the network service provider and end-users.

In addition, the Commission considered the following matters:

3. good regulatory practice - clarity, certainty and transparency of the regulatory framework and processes to reduce avoidable risks for network service providers and users;
4. cost of regulation - minimisation of the costs and risks of regulation to network service providers and end users; and
5. transition and implementation issues - appropriate resolution of transition and implementation issues and costs.

The Commission's approach to applying the assessment framework has been to consider, first, whether the TFP methodology proposed by the Proponent could, at a conceptual level, meet the assessment criteria and, second if so, whether the relevant conditions are present for TFP to be able to be applied. This analysis of these issues is set out in the following chapters.

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<sup>11</sup> AEMC, *Review into the use of total factor productivity for the determination of prices and revenues - final report*, 30 June 2011, page 5.

## 4 Assessment of TFP in general

This chapter sets out the Commission's higher-level consideration of whether the TFP methodology, at a conceptual level, could meet the assessment criteria described above.

### 4.1 Proponent's view

In the rule change request, the Proponent identified the reasons why it was of the view that the TFP methodology might offer advantages in comparison with a building block approach. One such reason is that because the TFP methodology is based on measured TFP, as opposed to forecasts of firm-specific expenditure and demand, it is likely to be less affected by problems of asymmetry of information between the regulator and the regulated business. This should mean less potential for the regulated business to use its superior knowledge of the business to convince the regulator to accept upwardly-biased expenditure forecasts.<sup>12</sup>

A flow on effect of this is that as the regulator should be more confident that inappropriate windfall gains to the regulated business are not accruing, a longer regulatory control period should be possible. A longer regulatory control period would in turn increase the incentives on the regulated business to be cost efficient, because it would improve the power of the incentives that are utilised to encourage businesses to act efficiently.<sup>13</sup>

The Proponent also contended that use of the TFP methodology in preference to the building block approach would reduce the cost of regulation. This is because the regulator would avoid having to assess a regulated business's forecast of expenditure, a task that is often challenging for a regulator on the basis of the asymmetry of information and possibly also expertise. It should be significantly simpler for the regulator to apply the 'known and measurable' information that is required for the TFP methodology.<sup>14</sup>

### 4.2 Stakeholder views

#### 4.2.1 First round of consultation

Most stakeholders addressed the question of whether the TFP methodology, at a conceptual level, would merit further consideration. There were mixed responses on this issue, however. The submissions from the AER<sup>15</sup>, Citipower/Powercor/ETSA

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<sup>12</sup> Rule change request, page 39-40.

<sup>13</sup> Rule change request, page 40-41.

<sup>14</sup> Rule change request, page 44.

<sup>15</sup> AER, submission to the rule change proposal, page 1.

Utilities<sup>16</sup>, Integral Energy (now Endeavour Energy)<sup>17</sup>, Jemena<sup>18</sup>, SP AusNet<sup>19</sup> and United Energy<sup>20</sup> were generally positive, at least in that there would be enough potential benefits that could be offered by a TFP methodology to justify a more detailed consideration of it. Most of these submissions, however, were not in favour of the TFP methodology and rule proposed by the Proponent.

Submissions from Country Energy (now Essential Energy)<sup>21</sup>, the Energy Networks Association<sup>22</sup>, Energex<sup>23</sup>, EnergyAustralia (now Ausgrid)<sup>24</sup> and Ergon Energy<sup>25</sup> were not in favour of TFP as a concept, for various reasons. Part of the rationale was that the building block approach is well established and understood. Other issues were that TFP could undermine the current regulatory framework in general and that, if a TFP methodology was not properly designed, it might have implications for the financial sustainability of regulated businesses.

#### **4.2.2 Second round of consultation**

Submissions received in the second round of consultation continued to be divided on whether the TFP methodology, at a conceptual level, could meet the assessment criteria described above.

The Department of Primary Industries (Victoria) (DPI) reiterated in its submission that the proposal met the NEO, and that it did not believe that circumstances had changed (since the original proposal had been submitted) to alter this view.<sup>26</sup> Given this, the DPI expressed the opinion that the AEMC has two options: to accept and make the proposed rule, or make a preferred rule. The DPI submission also indicated that a staged approach (as recommended by the AEMC in the final TFP report) would cause unnecessary delay in the introduction of TFP, particularly in Victoria, and that this would be contrary to the NEO. In addition, failure to make the rule as proposed would be inconsistent with the policy decision of the MCE in accommodating TFP as a subject matter for rules. Specifically, given that TFP is mandated by the electricity and gas laws, the AEMC's key duty in this regard, is to make rules to enable its use.<sup>27</sup>

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16 ETSA Utilities/Citipower/Powercor, submission to the rule change proposal, page 1.

17 Integral Energy, submission to the rule change proposal, page 1.

18 Jemena, submission to the rule change proposal, page 1.

19 SP AusNet, submission to the rule change proposal, page 2.

20 United Energy, submission to the rule change proposal, page 1.

21 Country Energy, submission to the rule change proposal, page 1.

22 Energy Networks Association, submission to the rule change proposal, page 2.

23 Energex, submission to the rule change proposal, page 2.

24 EnergyAustralia, submission to the rule change proposal, page 1.

25 Ergon Energy, Submission to the rule change proposal, page 3.

26 DPI, submission to the draft rule determination, page 5.

27 DPI, submission to the draft rule determination, page 4.

In contrast, Ausgrid stated that it did not agree that a case had been made that a TFP methodology would contribute to the NEO,<sup>28</sup> while Energex submitted that it did not believe that the TFP methodology was any more efficient than the building block approach.<sup>29</sup>

While favouring reform to the current regulatory framework and supporting more detailed consideration of TFP, the Total Environment Centre was less certain as to the efficacy of TFP in achieving efficiency, compared to other approaches.<sup>30</sup>

### **4.3 Other relevant considerations**

Other relevant considerations included the Commission's analysis in the final TFP report.

### **4.4 Commission's analysis**

#### **4.4.1 Commission's rule making powers**

The AEMC makes rules in respect of certain matters in relation to the NEM under powers conferred by section 34 of the NEL. Section 34 provides that the AEMC *may* make rules with respect to certain matters under those laws, but is not compelled to.<sup>31</sup> Further, in determining whether or not to make a rule, the Commission must be satisfied that it will, or is likely to contribute to the achievement of the national electricity objective, having regard to other relevant factors.<sup>32</sup>

The subject matter for which the Commission may make rules includes the items in the list in schedule 1 to the NEL. Clause 26J relates to the methodology known as 'total factor productivity'.

#### **4.4.2 Cost incentives**

Increasing the incentives on regulated businesses to pursue cost efficiencies will contribute to the achievement of the NEO. The Commission is of the view that, at a conceptual level, if a sufficiently robust and consistent data-set to support TFP exists, a TFP methodology could increase such incentives in two ways.

One of these ways is related to the information asymmetries that exist between the regulator and a regulated business. Since the regulator will not have complete information about the costs and expenditure of the regulated business, it may have

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<sup>28</sup> Ausgrid, submission to the draft rule determination, page 1.

<sup>29</sup> Energex, submission to the draft rule determination, page 1.

<sup>30</sup> Total Environment Centre, submission to the draft rule determination, page 2.

<sup>31</sup> The discretionary nature of this power is further clarified in clause 12, schedule 2 of the NEL, which also provides that clause 12 has effect despite any rule of construction to the contrary.

<sup>32</sup> Section 88 of the NEL.

difficulty estimating what the efficient costs of the regulated business should be. This is a critical part of the building block approach, and as a result the regulated business could use its information advantage to increase the revenue it is allowed by the regulator.

Under a TFP methodology, however, prices are not set on the basis of the regulated business's forecast of its costs but on industry-wide TFP growth. This would mean the regulator is less reliant on information from the regulated business and there should be a reduced ability for the business to increase its forecast of costs by exploiting the information asymmetry. This should in turn create an incentive for the business to seek additional profits through productivity improvements.

The other way that a TFP methodology could increase incentives is that it should also provide higher returns when a regulated business makes improvements which enhance productivity on a continuing basis. Under the building block approach, a regulated business retains the benefit of any increase in efficiency and/or reduction in cost for the regulatory period in which the benefit is achieved. However, at the next cost review the regulator builds this into the forecast and revenue allowance for the following regulatory control period, and the regulated business therefore retains none of those benefits in that following period (as well as any subsequent periods).

On the other hand, under a TFP methodology, the productivity growth of the regulated business is measured against that of the industry, so it should continue to benefit from any productivity enhancement it achieves. This creates an additional incentive to seek such efficiencies.

Using known and measurable information could also create more consistency in the regulatory process, possibly allowing for longer regulatory control periods. This would strengthen the incentives on businesses to reduce costs.

#### **4.4.3 Investment incentives**

The Commission is of the view that a TFP methodology could, at least to an equivalent extent to a building block approach, provide regulated businesses with a reasonable opportunity to recover their efficient costs.

In terms of ensuring a regulated business can recover its costs, a building block approach offers one advantage and one disadvantage compared to a TFP methodology. As it is based on a business-specific forecast of costs it may better provide for significant costs which only affect one regulated business. That is, the forecast can be better tailored to the circumstances of the specific business. On the other hand, because the forecast would be based on information from one business only, it could be expected to be more prone to errors which could cause divergences of allowed revenue from actual revenue.

Modelling undertaken as part of the TFP review indicates that since forecasting errors are common in applying a building block approach, a TFP methodology may be less risky than the building block approach in ensuring a regulated business can recover its

efficient costs.<sup>33</sup> This modelling also indicates that a TFP methodology could deal with significant industry-wide changes provided regular price resets are included as part of it. On the whole, a TFP methodology should be no more risky for a regulated business than a building block approach, and as a result there should be no more financing costs.

#### **4.4.4 Good regulatory practice**

The introduction of a TFP methodology may, through the information-gathering processes it introduces, lead to an increase in the level of regulatory consistency across the NEM. This is because for a TFP methodology to work in an optimal way, standardised information will be needed from regulated businesses. This would require jurisdictional differences in data reporting to be overcome. Having standardised data will increase the clarity of regulation.

As described above, since the regulator should be more confident under a TFP methodology that windfall gains are not accruing to a regulated business, longer regulatory control periods should be possible. This would increase certainty with respect to charges for all market participants.

#### **4.4.5 Costs of regulation**

As mentioned in the previous section, there is the possibility that a TFP methodology could lead to longer regulatory control periods. If this is the case, and there are less frequent cost reviews, the overall costs of regulation should be reduced. However, even if the extended regulatory periods do not lead to reduced costs, a TFP methodology may otherwise achieve this.

While implementing an information reporting regime will be required for a TFP methodology to work, a TFP methodology will avoid many of the costs involved in regulated businesses preparing, and the regulator assessing, business-specific forecasts which include detail such as the specific projects proposed by a business. Additional costs result from exploring these kinds of details.

#### **4.4.6 Transitional and implementation issues**

In general terms, there are likely to be a number of transitional and other issues involved in implementing a TFP methodology, which would include gathering the relevant historical data, maintaining the data-set going forward and establishing the TFP methodology itself (including the rules and procedures). These would have to be resolved appropriately for a TFP methodology to be successful.

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<sup>33</sup> AEMC, *Review into the use of total factor productivity for the determination of prices and revenues - final report*, 30 June 2011, page 61.

## 4.5 Conclusion

The analysis above supports the conclusion that if a sufficiently robust and consistent data-set to support TFP exists, a TFP methodology could, at a conceptual level, provide benefits in terms of the assessment framework described in chapter 3 above. In particular, it should provide increased incentives on a regulated business to pursue cost efficiencies while allowing the business to recover its efficient costs. The effect of information asymmetries would be reduced, potentially allowing for longer regulatory control periods.

The Commission acknowledges that the building block approach is well established and understood, and that there would be some challenges in a transition to another methodology, however that of itself should not be sufficient reason for resisting the change.<sup>34</sup>

Finally, transitional and implementation issues may need to be overcome before a TFP methodology could be applied. These may be based on whether the underlying conditions for TFP are present, which the following chapter considers.

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<sup>34</sup> The Commission is currently considering a rule change package that the AER has recently submitted, which seeks to address a number of the economic regulatory framework issues in chapters 6 and 6A of the NER.

## 5 Underlying conditions for TFP

An important pre-condition for the implementation of a TFP methodology is the existence of a robust and consistent data-set, since this is the basis of the TFP growth estimate and if it is set incorrectly, returns and incentives will not be efficient. This chapter describes this pre-condition and considers whether it has been met.

### 5.1 Proponent's view

The rule change request recognises, at several points, the importance of long term, reliable information that allows the historical growth in TFP for a sample of firms to be reliably estimated.<sup>35</sup> The rule change request itself does not expressly state the extent of such information in Victoria, though it does indicate that the level of information differs amongst jurisdictions in Australia, and that it may be supplemented by information from the United States. The rule change request also contains a requirement that the AER, in deciding whether to apply a TFP methodology, must have regard to the adequacy and quality of the data that would support the methodology.

The Department of Primary Industries (Victoria) (DPI) made a submission in the course of the TFP review in respect of the level of data available in Victoria, as described in the following section.

### 5.2 Stakeholder views

#### 5.2.1 First round of consultation

Several of the submissions received considered whether the quality of the existing data would be sufficient to support a TFP methodology.

The AER noted that a full national cost database was currently being developed by the AER but that it would take some time to be completed.<sup>36</sup> A subsequent submission made by the AER in March 2010 in respect of the TFP review *Preliminary Findings Paper*,<sup>37</sup> indicates that in 2010 the AER continued to be of the view that the existing data-set was insufficient.<sup>38</sup>

Energex made a similar comment that a TFP approach requires "consistent time series information" that was not available.<sup>39</sup> The combined Citipower/Powercor/ETSA

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<sup>35</sup> Rule change request, pages 4 and 19.

<sup>36</sup> AER, Submission to the rule change request, page 2.

<sup>37</sup> AEMC, *Review into the use of total factor productivity for the determination of prices and revenues - preliminary findings*, 17 December 2009.

<sup>38</sup> AER, submission in respect of the *preliminary findings* paper of the TFP review, page 1.

<sup>39</sup> Energex, submission to the rule change request, page 3.

Utilities submission noted the adjustments that have been made to outturn information in Victoria and that this has made it impossible to replicate the calculations.<sup>40</sup>

The issue of availability of data to support TFP was raised in the course of the TFP review. In submissions on the TFP review, comments were made by regulators and service providers that the existing data is not sufficiently robust to support a TFP methodology.

On the other hand, the submission of the DPI (February 2010) on the *preliminary findings* paper stated that, at least in Victoria, there is currently sufficient data for a TFP methodology to work.<sup>41</sup> The Essential Services Commission of Victoria (ESC) stated in its March 2010 submission on the *preliminary findings* paper that analysis it procured in Victoria suggests that the necessary trends for TFP can be established with confidence and similar analysis nationwide should commence.<sup>42</sup>

### **5.2.2 Second round of consultation**

In the second round of consultation, Ausgrid, Energex, Jemena and the AER concurred with the conclusion in the draft rule determination that the preconditions for effective implementation of a TFP methodology are not met.

The DPI reiterated its view that there is already sufficient data available in Victoria to proceed with the introduction of a TFP methodology, at least in that state. The DPI also considered that there is no incompatibility with rules being made in the short term to allow TFP, based on existing data, to be piloted in a jurisdiction where this is feasible, with separate rules being made to collect the requisite data on a nation-wide basis in preparation of a fully-fledged TFP based regime. In its view, these short term TFP rules may be subsequently modified to accommodate a national TFP regime without causing undue disruption to businesses already operating under the jurisdictional TFP rules. According to the DPI's submission, this would contribute to the achievement of the NEO by allowing regulatory competence to be built up in the application of TFP without exposing the whole industry to unexpected outcomes through a sudden and significant change in regulatory methodologies.<sup>43</sup>

### **5.3 Other relevant considerations**

Other relevant considerations included the Commission's analysis in the final TFP report.

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<sup>40</sup> ETSA Utilities/Citipower/Powercor, submission to the rule change request, page 2.

<sup>41</sup> DPI, Submission in respect of the Preliminary Findings Paper in the Review, page 9.

<sup>42</sup> ESC, submission in respect of the *Preliminary Findings* paper of the TFP review, page 12.

<sup>43</sup> DPI, submission to the draft determination, page 5.

## 5.4 Commission's analysis

### 5.4.1 Robust and consistent data-set

A robust and consistent data-set is critical for the successful implementation of a TFP methodology. A TFP growth estimate must accurately provide a measure of productivity performance for service providers. If input and output quantities are reported incorrectly (or not at all) or are inconsistent for different service providers, the TFP growth estimate may simply reflect the errors, inconsistencies or gaps in the data.

This relates to the assessment criteria because if the TFP growth estimate is incorrect the cost incentives or investment incentives may be set incorrectly, which may impact on efficiency. For example, if the investment incentives are wrongly applied a TFP growth estimate may not allow a service provider to recover its efficient costs. This would in turn suggest the rule proposal does not contribute to the NEO.

A robust and consistent data-set must be predicated on consistent definitions of the way input and output quantities have to be reported. This is particularly significant since input and output quantities will not necessarily have formed part of building blocks analyses. The data-set must also cover a sufficiently long period of time. At least one business-cycle of data should be included to remove any business cycle impacts. Finally, it would be preferable that the data-set be in the public domain. This will increase transparency about the way the TFP methodology is applied, and may reduce the likelihood of disputes.

The Commission has considered the analysis it undertook in the TFP review, and in particular the reasoning in the draft report of that review, dated 12 November 2010 (draft TFP report). While the TFP review was not specific to Victoria, it considered Victorian issues in depth. The draft TFP report considers a report produced by Economic Insights<sup>44</sup> which concluded that the current data across all jurisdictions is not sufficiently robust to be used for a TFP methodology. The quality and consistency of data has varied across jurisdictions and over time, and has tended to focus on financial information, in preference to physical data. The financial information itself has been adjusted and refined over time, making it less useful for TFP purposes. Finally, Economic Insights noted that most of the data is not in the public domain or else is presented in an aggregated form.<sup>45</sup>

In respect of Victorian matters, the draft TFP report raises queries over the robustness of the Victorian data.<sup>46</sup> Further, without information being produced by other regions on a consistent basis, there may not be enough information to determine TFP trends with sufficient confidence. The draft TFP report notes that systematic differences in

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<sup>44</sup> Economic Insights, *Assessment of data currently available to support TFP-based network regulation*, 9 June 2009.

<sup>45</sup> AEMC, *Review into the use of total factor productivity for the determination of prices and revenues - draft report*, 12 November 2010, page 118.

<sup>46</sup> AEMC, *Review into the use of total factor productivity for the determination of prices and revenues - draft report*, 12 November 2010, page 65.

coverage and definitions exist across regions in Australia. It also refers to earlier discussions with the ESC which identified problems with data availability and integrity.<sup>47</sup> Finally, the draft TFP report responds to a proposition by SP AusNet that existing data can be 'cleaned' to ensure consistency in definitions, but notes that previous experience suggests such a process would be difficult and could lead to disputation and gaming.<sup>48</sup>

Even if there was sufficient data available in Victoria to implement a TFP methodology, the Commission considers that it would not be ideal to allow a TFP methodology to apply in one jurisdiction while conducting a data collection exercise to enable TFP in other regions. This is because jurisdictional frameworks should not be allowed to evolve separately from the national approach: this would be inconsistent with the development of a single national energy market. Implementation in Victoria only would also be inconsistent with the assessment criteria that the Commission have identified.<sup>49</sup>

A range of benefits flow from having a uniform national energy market and national approaches to regulation. These should be preserved to the extent possible. On this basis, it would be preferable for TFP specifications and methodologies to be developed in harmony, and a common framework for the implementation of the TFP methodology applied across the NEM as far as possible according to similar timing.

As noted above Victorian DPI has indicated that there is sufficient data available in that state to commence the use of TFP. However, there is a question mark over the ability of the Victorian data to satisfy the needs of any TFP methodology to be adopted. Further, based on the submission received in the first round of consulting there is little indication from the Victorian businesses that they would use the Victorian form of TFP set out in the rule change request.

The DPI's submission also suggested that piloting the regime on a limited basis to provide an opportunity to gain regulatory exposure to, and experience with, TFP. The Commission is of the view that a staged approach to implementation builds in an opportunity for all parties, including the regulator, to gain competence with TFP as a methodology. This is outlined in detail in the final TFP report.<sup>50</sup>

## 5.5 Conclusion

The Commission is of the view that, in the NEM, sufficient robust data to support a TFP methodology does not currently exist. This conclusion means a key pre-condition to support the rule change request is currently absent. In these circumstances, and consistent with its findings in the final TFP report, the Commission has decided that no rule should be made, including on a pilot basis.

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<sup>47</sup> Ibid, page 66.

<sup>48</sup> Ibid, page 66.

<sup>49</sup> These criteria are set out in chapter 3.

Instead, a better option for exploring further the potential for a TFP methodology would be to start to collect the relevant data that would be needed to determine whether it could apply. Rules that would facilitate this data collection exercise have been proposed by the Commission as part of the final TFP report, and are currently being considered by the Ministerial Council for Energy.

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50 AEMC, *Review into the use of total factor productivity for the determination of prices and revenues - final report*, 30 June 2011, pages 21-22.

## Abbreviations

AEMC	Australian Energy Market Commission
AER	Australian Energy Regulator
Commission	See AEMC
DPI	The Department of Primary Industries (Victoria)
ESC	Essential Services Commission of Victoria
MCE	Ministerial Council on Energy
NEL	National Electricity Law
NEM	National Electricity Market
NEO	National Electricity Objective
NER	National Electricity Rules
Proponent	Minister for Energy and Resources (Victoria)
TFP	total factor productivity

## **A Summary of issues raised in consultation**

### **A.1 Second round of consultation**

The first round of consultation on the rule change request closed on 22 August 2008. The Commission received 11 submissions, and these are available on the AEMC website.<sup>51</sup>

The second round of consultation on the rule change request closed on 10 November 2011. In total, six submissions were received. The issues raised and comments made in the submissions, and the AEMC's responses to these, are summarised in the following table.

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<sup>51</sup> [www.aemc.gov.au](http://www.aemc.gov.au).

Stakeholder	Stakeholder comment	AEMC response
Ausgrid	Agree that the preconditions for a TFP methodology have not been met (p. 1).	This comment has been noted by the Commission.
Ausgrid	Do not agree that a case has been made that a TFP methodology could contribute to the NEO. Have particular concerns about the validity of the conclusion that a TFP methodology could be used as an alternative to the building block approach for setting price or revenue paths at a level that is sufficient to cover costs and manage changes in business or economic circumstances. There are still some unresolved issues with the modelling and consequently with the conclusions that can be drawn from this work (p. 1).	These comments have been noted although the Commission is of the view that further consideration these issues to be beyond the scope of this current rule determination.
Ausgrid	Agree that a robust data set would be required, however the decision to proceed with a data collection exercise before a definitive conclusion on the merits of TFP is premature. A more pragmatic approach would have been to design a model and then gather the appropriate data to populate the model, rather than the current process where data collection is wide in scale and lacks clear focus (p. 2).	These comments have been noted although the Commission is of the view that further consideration these issues to be beyond the scope of this current rule determination.
Ausgrid	DNSPs are currently subject to the AER's wide-ranging data and gathering powers in the form of the regulatory information notice: the TFP data requirements will oblige businesses to provide two sets of audited records and potentially to develop additional systems which would result in significant cost (p. 2).	These comments have been noted although the Commission is of the view that further consideration these issues to be beyond the scope of this current rule determination.
Ausgrid	Strongly disagree with the proposal that the AER may potentially use historical data as the inappropriateness of currently available data was well established and beyond review in the final TFP report. It should be excluded from the TFP data collection rules (p. 2).	These comments have been noted although the Commission is of the view that further consideration these issues to be beyond the scope of this current rule determination.

Stakeholder	Stakeholder comment	AEMC response
Ausgrid	Many DNSPs have already expressed concern that the use of data gathered under regulatory information notices for bench-marking is extracting too far away from individual business circumstances: TFP would arguably go further (p. 2).	These comments have been noted although the Commission is of the view that further consideration these issues to be beyond the scope of this current rule determination.
Ausgrid	Disappointed with the approach adopted by the Commission where it developed the TFP data collection rules without consultation from stakeholders. This lack of transparency seems inconsistent with a central goal of the TFP methodology which is to promote transparency (p. 2).	These comments have been noted although the Commission is of the view that further consideration these issues to be beyond the scope of this current rule determination.
Australian Energy Regulator	Agree with the AEMC's draft decision: consider that a robust and consistent data set for applying a TFP methodology to pricing determinations does not exist (p. 1).	This comment has been noted by the Commission.
Australian Energy Regulator	AEMC's proposed rules will have implications for the AER's existing processes, and will therefore have to consider how best these provisions will best interact with the AER's existing NEL based information powers that are currently being used to effect the AER's new information, reporting and analytical framework that is currently being developed (p. 1).	These comments have been noted although the Commission is of the view that further consideration this issue to be beyond the scope of this current rule determination.
Australian Energy Regulator	Consider that the feasibility of a TFP methodology for electricity distribution network regulation will be determined by the outcomes of the AEMC's wider review into the use of TFP for the determination of prices and revenues. To this end, also supports the proposed two stage approach (p. 1).	These comments have been noted by the Commission.

Stakeholder	Stakeholder comment	AEMC response
Department of Primary Industries (Victoria)	<p>Disappointed with the AEMC's decision not to make rules for the implementation of a TFP methodology for price setting at this time. The staged approach proposed by the AEMC will unnecessarily delay the potential introduction of TFP, particularly in Victoria where sufficient data already exists to support the introduction of TFP (p. 4).</p>	<p>The Commission does not consider that the energy objective has been met, in that the necessary pre-conditions for the implementation of a TFP methodology are not present. In particular, it does not consider that the existing data available (across all jurisdictions) is sufficiently robust to allow for the effective implementation of a TFP methodology. As this is a key requirement, the Commission considered that a better approach would be via a two-staged approach, firstly to gather the necessary data (which will take some time) and, secondly, make an assessment as to the appropriateness of developing more detailed TFP rules when the necessary conditions are met.</p>
Department of Primary Industries (Victoria)	<p>Reiterated the following propositions which were submitted in its 2010 submission to the review:</p> <ul style="list-style-type: none"> <li>• TFP is mandated by the national electricity and national gas laws;</li> <li>• Delay in use of the TFP methodology is contrary to the objectives of these laws;</li> <li>• Items 26J and 42 allow for possible data issues;</li> <li>• Inadequacy of data has not prevented introduction of TFP in other jurisdictions; and</li> <li>• There is already sufficient data for Victoria (p. 4).</li> </ul>	<p>This comment has been noted by the Commission. These issues are addressed in more detail in chapters 4 and 5 of this final rule determination.</p>

Stakeholder	Stakeholder comment	AEMC response
Department of Primary Industries (Victoria)	<p>AEMC's key duty in undertaking the proposed rule change is to make rules for the use of TFP, as reflected in the schedules of the NEL and NGL which nominate TFP as subject matter for rules to be made. This is a policy decision that was made by the MCE in settling those laws. To decline to make rules for TFP is, in the Department's view, inconsistent with the policy decisions which inform the AEMC's rule making powers. These schedules make clear that the AEMC has a discretion to make rules which implement the use of TFP in various regulatory contexts, including in making pricing and access determinations, or as a tool to assist or analyse the application of the building blocks price setting methodology. The options available for the AEMC are to accept the proposed rule as achieving the NEO or make a more preferred rule. This might reflect a variant of the Victorian proposal, the AEMC's preferred approach derived from its review or some other rule that best achieves the NEO (p. 4).</p>	<p>The Commission's power to make rules under the NEL and NGL is a discretionary power (s 34 NEL, ss 69 and 74 NGL), and must be guided, in the first instance by the national electricity and gas objectives. Accordingly, while the law allows for the possibility of TFP to be implemented, it does not mandate that the rules enabling its implementation be made unless the energy objective is met.</p> <p>In the current case, as set out in this final determination, the Commission does not consider that the energy objective has been met. This matter is discussed in more detail in chapter 4 of this final rule determination.</p>
Department of Primary Industries (Victoria)	<p>The Victorian proposal achieves the NEO and, moreover, is not fundamentally incompatible with the AEMC's proposed national approach. The nature of the proposal was of a 'pilot scheme', which allowed distributors to 'opt in', with considerable discretion being given to the AER to flexibly apply TFP based on its assessment of needs. The AEMC's approach is to implement nation-wide data gathering first, with a further set of rules to enable regulation of distribution tariffs via TFP to be made at a later stage. There is no incompatibility with rules being made in the short term to allow TFP based on existing data to be piloted in practice in a jurisdiction where it is feasible, with other rules being made to collect nation-wide data and prepare the ground for a fully fledged TFP based regime. This should contribute to the achievement of the NEO by allowing regulatory competence to be built up in the application of TFP without exposing the whole industry to unexpected outcomes through a sudden and significant change in regulatory methodologies (p. 5).</p>	<p>The Commission reiterates the view expressed in its final TFP report, that state regulatory frameworks should not be allowed to evolve separately from a national approach. This would be inconsistent with the continuing development of the national energy market framework. This matter is discussed in more detail in chapter 5 of this final rule determination.</p>

Stakeholder	Stakeholder comment	AEMC response
Energex	Support the draft decision not to make a draft rule given that the necessary preconditions for applying a TFP methodology are not currently present (p. 1).	These comments have been noted by the Commission.
Energex	Do not support the introduction of TFP or the initial data collection rule as discussed in the draft rule determination as no significant efficiency point of difference exists between the building block approach and TFP based methodology. Significant further work needs to be undertaken to have any confidence that purported benefits of TFP can be derived (p. 1).	These comments have been noted although the Commission is of the view that further consideration this issue to be beyond the scope of this current rule determination.
Energex	Costs of additional data collection to facilitate TFP may be substantial, based on previous refinements and additions to data reporting requirements. Balance in terms of information requirements and associated costs is essential (p. 1).	These comments have been noted although the Commission is of the view that further consideration this issue to be beyond the scope of this current rule determination.
Energex	Consultation is critical not only in developing any proposed data-set but in developing a TFP specification and establishing the existence of the pre-conditions (p. 1).	These comments have been noted although the Commission is of the view that further consideration this issue to be beyond the scope of this current rule determination.
Jemena	Support the draft decision not to make a draft rule.	This comment has been noted by the Commission.
Total Environment Centre	Concerned that current regulatory framework is weighted heavily in favour of network service providers, and the information bias issue is compounded under the current building block approach where a large amount of network service provider specific information is required to make a determination (p. 2).	These comments have been noted although the Commission is of the view that further consideration this issue to be beyond the scope of this current rule determination.
Total Environment Centre	TFP has the potential to make revenue determinations less transparent and the AEMC's decision to request that the MCE consider TFP in more detail before proceeding with a rule change is welcomed (p. 2).	This comment has been noted by the Commission.

Stakeholder	Stakeholder comment	AEMC response
Total Environment Centre	While supporting reform of the current approach, the infancy of TFP necessitates a more detailed consideration of the options and a more detailed rule change proposal (p. 2).	This comment has been noted by the Commission.
Total Environment Centre	Agree with the need for more complete data on which to base TFP. Have often encountered difficulties in sourcing accurate and detailed information regarding a range of aspects of the functioning of the NEM. There is a general lack of consistent data collection and dissemination in the NEM (p. 3).	This comment has been noted by the Commission.