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Australian Energy Market Commission
PO Box A2449
SYDNEY SOUTH NSW 1235

Dear Sir / Madam

Review into the use of total factor productivity for the determination of prices and revenues

Country Energy appreciates the opportunity to provide input into the Australian Energy Market Commission's (AEMC's) review of the use of total factor productivity in determining prices and revenues.

Attached to this covering letter is Country Energy's submission detailing our response to the positions put forward and issues raised in the AEMC's design discussion paper.

Country Energy would be pleased to discuss this matter further. Should you require further information or clarification please feel free to contact Jason Cooke on 02 6338 3685.

Yours sincerely

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Review into the use of total factor productivity for the determination of prices and revenues

October 2009

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General Overview

Country Energy appreciates the opportunity to provide input into the Australian Energy Market Commission (AEMC) review of the use of total factor productivity (TFP) in determining prices and revenues. To date, the majority of Country Energy's contributions have come indirectly through the Energy Networks Association (ENA). However, given the review is focussed on specific matters in the AEMC's Design Discussion Paper (the Paper), there are comments we wish to make in addition to the submission made by the ENA.

Country Energy's response to the Paper is effectively in two parts:

1. Discussion of overarching issues, some of which cover matters that have previously been the subject of this review; and
2. Responses to specific questions raised in the Paper.

Overarching Issues

Country Energy fully supports the AEMC's rigorous and complete approach to the review into the use of TFP. The AEMC has created the opportunity for debate on TFP, and the presentation of a possible 'straw man' model in the Paper will assist to develop issues and clarify certain aspects of the debate.

Country Energy is not opposed to the possibility of using TFP *per se*, however Country Energy is guarded on whether the approaches to TFP proposed can deliver the benefits that have been attributed to it by various proponents. The evidence provided to date has been limited and not subjected to testing by the industry or regulatory economists. Importantly, there seems to have been very little research into the alternative ways TFP could be used, how it has been used, the effect of its use, and in particular, the regulatory and business dynamics it has created. That is, research into whether it has improved the operationsand efficiency of the businesses, increased customer satisfaction , and improved regulatory processes.

Country Energy notes that the transitioning of all network service providers to a national framework for economic regulation is a significant reform, but is still in the very early stages. The new National Electricity Law (NEL), National Gas Law (NGL), National Electricity Rules (NER) and National Gas Rules (NGR) developed for this reform program involved lengthy and detailed consultation with all stakeholders. Country Energy believes that the new national framework needs to be given time to establish itself and then reviewed at an appropriate time in the future, before a new underlying framework such as TFP is contemplated.

TFP, correctly understood, specified and applied may a useful tool. However, TFP has not and cannot be definitive in assessments about the relative and absolute efficiency of businesses.

As noted in section 2.1 of the Paper, productivity does not equal efficiency. Some businesses may be more productive than others, but less efficient and vice versa. Equally, some businesses will have had greater opportunity to increase productivity than others, depending on whether they are starting form an efficient or inefficient level. Even if past productivity improvement were a sound predictor of future productivity growth, this

opportunity is likely to be different for every service provider. As a result, more information than one business' productivity relative to other businesses is required in assessing efficiency.

Unfortunately, undertaking benchmarking to identify if a business is clearly inefficient is not an easy task because of significant issues of measurement and comparability. TFP requires significant normalisation before comparisons between businesses are possible. This is not a straightforward task and requires subjective judgements to be exercised. Even with the best statistical techniques, benchmarking studies can only provide a wide range within which comparable businesses' costs can be considered equivalent (using confidence intervals). This is because of the large number of variables that influence costs across a limited number of businesses with limited scope to normalise the costs to increase comparability.

Having considered the issues around forecasting efficient costs, it is important to consider the benefits claimed for use of historic TFP to set the price path.

Section 2.2.4 of the Paper summarises the results of the questionnaire on the building blocks reported in the AEMC's report *Perspectives on the building blocks approach.* In Country Energy's view the apparent benefits of TFP suggested by respondents are at best overstated, for the reasons described below.

The current proposal for application of TFP:

uses **backward looking** productivity growth measurements for the **average** of industry to forecast efficient costs of an **individual** business

The words in bold above represent particular problems with the application of TFP. For TFP to work effectively, the approach must be at least corrected or adjusted for each of the implied problems. Many of the issues and variations to the TFP methodology identified in the Paper are designed to try and overcome these issues.

One of the benefits attributed to TFP is that it provides incentives for innovation. If the use of TFP is to simply set a price path (as is currently proposed), this is no different to the use of building blocks (or to using an arbitrary X factor). In its proposed application it is unclear how use of TFP caters to the issue of innovation. That said, it would be possible to include innovation as part of the capital program under building blocks or through an extra factor in the price path (similar to the D factor for demand management). In Country Energy's view, any claims that use of TFP will assist innovation any more than building blocks needs to be investigated further.

Should the AEMC determine to implement the use of TFP it is essential for all concerned that it be given an opportunity to work. Any benefits available from TFP will only arise if service providers are given the right to opt in. The proposal contained in the Paper to adopt this approach is wise and Country Energy endorses it.

There are attendant risks and unknowns associated with adopting an untried approach – particularly where there are well documented reasons for some scepticism. However, where businesses have the ability to adopt new approaches without the fear of being locked in, they will be more willing to take the leap knowing that there is an option to revert if the results or practical application do not meet expectations. Giving the service

providers the option will provide the best way to develop and make necessary refinements to TFP, and establish if there are net economic benefits.

Country Energy believes that the opting in of one or more service providers to a TFP approach creates challenges. Country Energy's understanding is that if one business opts in, all businesses must then supply TFP data. This will result in significant cost increases for all businesses, and therefore for all consumers. Service providers who have not opted in will still have to report two sets of data, even though one has no relevance to it. The regulator will also have to operate under two frameworks at the same time. In practical terms, and in the long term interests of consumers, Country Energy believes that only one framework and methodology should be in operation at any one time.

Unfortunately, the use of TFP as proposed to the AEMC is in effect a solution without clearly articulating the limitations or problems with the current developing approach. Country Energy submits that the approach of proposing a solution and then seeking to support it is not an effective way to develop energy policy and regulation. The problem to be solved needs to be properly identified, then the AEMC, along with industry, can identify the best solution.

Section 2 – Rationale for a TFP methodology in incentive regulation

Section 2.2.4 of the Paper summarises the advantages and disadvantages of the building block and TFP methodologies identified by the AEMC's questionnaire on building blocks. Country Energy makes the following comments about these conclusions.

- As discussed above, neither TFP nor building blocks, as it is currently practiced, caters for innovation. It is likely that for either methodology, a new mechanism will have to be introduced to provide incentives and cost recovery for innovation.
- Building block forecasts are forward looking and do not focus on past performance. TFP looks at the past and applies historic TFP as if it was the future.
- There is no support for suggesting building blocks will result in prices that are too high, and there is no basis for suggesting the use of TFP will be any different.
- TFP still requires business specific cost data. The idea that businesses are benchmarked against a historic industry average of productivity growth is superficial. The real incentive derives from a price path.
- The problem of information asymmetry will also apply to the TFP approach when building blocks are analysed at the start of each regulatory period in order to set the Po starting point.
- Suggesting that use of TFP will end disputes is superficial. The disputes will continue as long as there are a range of variables over which there is a range of possible answers, arguments to support different answers, and where there is a significant amount of money at stake.
- The argument about lower regulatory costs has not been supported by any cost benefit analysis that Country Energy is aware of. The costs of using TFP should be more rigorously assessed.
- It is possible that the use of TFP will create a whole new set of systems and information collection that adds substantially to the investment and workload of service providers and the regulator, unless some very careful and disciplined design thinking is applied.

Section 4 – Applying a TFP methodology

4.1 Prescription in the Rules

Country Energy agrees with the position put forward in the Paper that the majority of the TFP methodology and framework should be specified in the NER, consistent with the approach adopted throughout the national reform process to date. The approach adopted by the Paper is an appropriate balance between the level of prescription in the Rules and the discretion given to the AER to develop non binding guidelines.

4.2 Process for selecting a revenue methodology

Country Energy supports the proposed approach in the Paper to allow the service provider the choice of opting in or out of using TFP at their discretion, without the need for regulator approval. It is also agreed that the principles and mechanisms of the TFP framework should be locked in and unable to be amended for the entire regulatory control period.

Section 5 – Calculating the TFP growth rate

5.1 Appropriate methodology

Country Energy agrees with the rationale for the use of an index based methodology.

5.2 Design of an index methodology

- *What should be the correct specification of inputs and outputs to be used to calculate the TFP growth estimate?*

  Determining correct inputs and outputs for TFP is essential for accurate measurement of TFP growth. The outputs of a gas or electricity network include the number of customers who take energy, the distance gas or electricity is transported to them, and the capacity available to them. The fact that more or less energy may be delivered is a function of usage patterns, not the capacity of the network to deliver. Consequently, Country Energy substantially agrees with Lawrence's output specification, but suggests that energy (electricity) and volume (gas) are unlikely to be outputs, or at the very least, will play a minor role and should be given only a small weighting.

  Country Energy is of the view that important outputs for a network are service reliability and quality. As far as Country Energy is aware, no TFP methodology is currently able to adequately capture and measure these outputs. One of the major challenges is how to reconcile these long term outputs against the short term input costs of a regulatory control period. Lawrence has acknowledged that at present, no solution has been found to address this shortcoming of a TFP approach.

  Country Energy believes that Lawrence's specification using physical quantities of inputs is a more accurate reflection of the true inputs in measuring TFP. Kaufman's approach of using deflated asset values is likely to be distorted and does not as effectively estimate the resource available to deliver the outputs.

- *Is the proposed set of criteria to identify the correct specification appropriate?*

  Country Energy is satisfied that the criteria for the correct specification cover the main matters to be taken into consideration to ensure practicality and effectiveness.

- *Is a single X factor for all regulated service providers in the sector appropriate? Or, would it be necessary to divide the sector into four subsets according to operating environment conditions or customer density?*

  This question highlights the very significant problem of applying an industry average to an individual business. Using an X factor that better reflects an individual service provider's realities is an important consideration in achieving the NEL/NGL objectives and pricing principles. While there will be industry wide opportunities for productivity growth with changes in technology, how these affect the productivity of individual businesses will be dependent on the opportunities of individual networks to apply them. In Country Energy's view the four categories are unlikely to be very useful, because they are only partial proxies for the differences between businesses, there will be further differences that these categories do not resolve, and there will be too few businesses in each category to arrive at a meaningful and useable conclusion.

  The main issue is identifying an X factor that reflects a reasonable forecast productivity growth for each individual business. In addition to the variations between businesses identified in the Paper, there are also a range of additional factors that differ between service providers including, but not limited to:

  - Asset history
  - Design architecture
  - Customer penetration
  - Climate
  - City planning differences
  - Geographic differences
  - Socioeconomic differences
  - Scale

  Country Energy agrees that it will be necessary to clean up the data-set, maximise data comparability and remove the effects of exceptional events. Experts disagree on the extent of normalisation that should take place, if any at all, due to the subjectivity of the exercise. The more normalisation that is required for a particular data-set, the less meaningful the results become. However, if data is not normalised or scale not considered, there will be a significant problem of comparability.

  As identified above, the simple application of historic averages of TFP growth is to forecast the future with the past. There seems to be little recognition of the fact that the past may be a poor predictor of the future. Even if the path from the past to the future is stable, it would be reasonable to recognise the convergence effect. In this case, future productivity growth should be expected to be less than the past. The use of historic TFP must deal with the convergence effect, or X factors used in price paths will underestimate the future costs of service providers.

  The length of the time period to be used depends on whether the method takes:

  (i) a simple point to point trend of the historic productivity growth,
  (ii) an average of the productivity growth,

(iii) a straight line trend analysis, or
(iv) a more sophisticated analysis of the trend in productivity growth that would assist in assessing the level of the convergence effect.

If any of (i) to (iii) is used then a period of no more than 5 years, but preferably 3, should be used so as not to overestimate future productivity growth. If (iv) were to be used, a longer time series of 10 years or even longer could be considered. However this decision should not be mechanical, but appropriate statistical tests and reasoning should be applied to ensure that any resulting X factor is reasonable.

Country Energy agrees that fixed weights should be used to minimise regulatory uncertainty.

Section 6 – Setting the initial cap

6.2 Design element

- *What would be the impact on service providers' incentives to improve performance under this design example?*

  The use of TFP does not appear to offer anything more in terms of incentives than the current building block approach. There may even be less incentive under TFP when prices are reset at the start of each regulatory control period with reference to building block costs. The closer it is to the end of the regulatory control period, the less incentive there will be for service providers to reduce costs, as these savings will be handed straight back to consumers.

  Country Energy is also concerned at the incentives for increasing service performance under a TFP approach. As previously discussed, reliability and quality of supply is a long term indicator that is not yet able to measured as an output under a TFP approach. The consequence maybe that service providers will not invest in short term inputs that will have no measurable output under a TFP approach. The deterioration in reliability and quality of supply performance would not be felt for many years to come.

- *Should the regulator have the discretion to refer to other information, such as forecast costs, when setting the initial price or revenue cap?*

  Given the problems of step and scope changes, and varying capital investment cycles, there would be a need for such discretion to be exercised, but on a guided basis under the NER and NGR. However, the more such adjustments are made, the more challenging the use of TFP becomes. This demonstrates that the more the TFP methodology design seeks to overcome the shortcomings of the TFP methodology, the more it begins to look like a building blocks approach, and the less benefits that can be attributed to it.

6.3 Considerations

While Country Energy understands the rationale for using the most recent three years of data, the data used for establishing the Po should not be limited to just the last three years, if a fourth year of data becomes available as the regulator's review progresses.

Section 7 – Additional design terms

7.1 Flexible design features

- *Should a regulatory period longer than five years be set in the NER and NGR for a service provider using a TFP methodology?*

  The key principle is the longer the regulatory control period, the stronger the incentives. It would make sense to allow for a service provider to choose a longer period for TFP, but it is difficult to know how much longer this provision should extend. It would be sensible to use 5 years as the default and allow businesses to propose up to 10 years in the first instance. Country Energy proposes that a TFP methodology should allow for ongoing reviews of appropriate regulatory periods as experience is gained.

- *Are any amendments to the current provisions required to ensure compatibility with a TFP based framework?*

  An initial reading indicates that the pass through provisions are sufficiently general to enable adequate pass through mechanisms required under a TFP methodology, as the nature of a pass through event is the same under both building blocks and TFP. However, a rigorous review by the AEMC is warranted to ensure no unintended consequences arise.

- *Is a capital module required and, if so, how should such a module be designed for Australia? In particular, should the module use agreed (and prudently assessed) forecast or actual expenditure amounts?*

  Country Energy believes that for a TFP methodology to be workable it must include a capital module, due to the lumpiness and variations in capital expenditure. Country Energy understands that the capital module would be similar to the contingent projects regime used for electricity transmission network service providers, whereby irregular or exceptional capital could be included in the price path at the time of investment based on the regulator's assessment at that time.

- *Is there a need for an off ramp mechanism to be included in a TFP methodology?*
- *Does its use inappropriately reduce incentives?*

  Country Energy is of the opinion that the use of off ramps is problematic and likely to defeat the intent of using a TFP approach, causing it to drift towards rate of return regulation. One option would be to duplicate the current rights of a service provider under the NGR to submit a new access arrangement for approval at any time. A service provider will only do so when there is a substantial reason. The cost and disruption of submitting such a proposal is too great without good reason. It would be appropriate to change the NER to enable the same approach, if TFP were to be implemented.

  The introduction of the concept of off ramps is a further illustration of how the apparent simplicity of a TFP based approach becomes diluted by additions and adjustments.

- *Should a service provider be able to select the form of the X factor? Or, does this provide a level of uncertainty that is undesirable in the operation of a TFP methodology?*

  For reasons identified above, a simple fixed X factor should be adopted. This strengthens the incentive mechanisms and reduces regulatory uncertainty.

7.2 Incentives schemes

Country Energy agrees with the Paper's conclusions on incentive schemes. Inclusion of an efficiency benefit sharing scheme would require the development of an operating expenditure forecast, which would defeat the purpose of a TFP approach and introduce an overlapping incentive mechanism.

One matter that should be considered is the impact of the demand management and service performance incentive schemes on historic TFP growth. The application of these schemes has varied in the past between jurisdictions. The impact of these schemes on historic TFP growth of individual businesses and the industry as a whole is unknown. For example, Victorian electricity businesses have had a service performance incentive scheme with varying levels of incentives, while some other jurisdictions have not. Likewise, NSW has had a demand management incentive scheme while other jurisdictions have not.

The adoption of the national Service Target Performance Incentive Scheme may impact on future TFP growth in individual businesses in ways that may advantage or disadvantage them. The AEMC should understand the impact of these changes before implementing such schemes into a TFP methodology.

- **Section 8 – Setting the price path under TFP**

8.2 Terms to the allowed rate of change

- *Is the rationale for allowing business specific adjustments to the X factor correct?*

  Country Energy agrees with the position put forward in the Paper that business specific adjustments are problematic and may introduce arbitrary or subjective judgements. While the rationale for allowing business specific adjustments may be correct, such adjustments would reduce regulatory certainty and predictability, dilute incentives and move TFP closer to the current building blocks approach.