RESPONSE TO AUSTRALIAN ENERGY MARKET COMMISSION – DESIGN DISCUSSION PAPER

Review into the Use of Total Factor Productivity for the Determination of Prices and Revenue

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1. EXECUTIVE SUMMARY

The Australian Energy Market Commission's (AEMC) Design Discussion Paper regarding the development of a total factor productivity (TFP) methodology provides a high level design approach with much of the detail to be determined following consultation with stakeholders.

While understanding and supporting this approach given the complexities involved in developing the detail of the TFP methodology, it will only be when the detail of the specification is developed that ENERGEX will be able to fully understand how it will operate and hence the incentives and risks that it would create for our business. As a result, the paper tends to raise more questions than it addresses. Greater clarity on the design specifications and data requirements will be required in the AEMC's Stage 1 Draft Report.

As indicated by the AEMC, the purpose of Stage 1 of its review of the use of the TFP methodology for pricing and revenue decisions is to assess whether it would promote either the National Electricity Objective (NEO) or the National Gas Objective (NGO) and make recommendations to the Ministerial Council on Energy (MCE) accordingly.

Having regard to the efficiency focus of the NEO/NGO, in ENERGEX's view, the key focus of the AEMC's assessment should be on the performance incentives created for service providers under the TFP methodology, as well as the associated administrative/regulatory costs likely to be incurred (by all service providers and the Australian Energy Regulator (AER)) if it were to be applied.

Ultimately, if the incentives created under the proposed TFP methodology and the associated administrative/regulatory costs are broadly comparable with those under the existing building block methodology, the NEO/NGO is unlikely to be met by the introduction of TFP as an alternative form of regulation. In contrast, if the incentives are broadly comparable but the associated administrative/regulatory costs are significantly lower under the TFP methodology, then the NEO/NGO may be promoted. The NEO/NGO may also be promoted if the TFP methodology creates more high powered incentives for regulated businesses and at least results in no significant increase in administrative/regulatory costs.

In other words, ENERGEX considers that there needs to be an efficiency-based significant point of difference between the two methodologies to justify the TFP methodology being incorporated in the National Electricity Rules (NER)/National Gas Rules (NGR) as an alternative form of regulation. In ENERGEX's view, this point of difference should be that TFP is a discernibly more light handed approach and creates more high powered incentives compared to the building block methodology. This would provide a clear choice for service providers regarding the two methodologies, reflecting their appetite for risk amongst other things.

A specific concern of ENERGEX is that the TFP methodology as currently being developed by the AEMC will ultimately be incorporated in the NER/NGR and become a mechanism by which the efficiency of a service provider's expenditure is assessed under the building block form of regulation. In other words, TFP will become another (comparative benchmarking) arm of building block regulation rather than a stand-alone alternative form of regulation under the NER/NGR, with the additional administrative/regulatory burden for service providers that this will entail.

One of the principal benefits advanced by TFP proponents is that it increases the efficiency of the regulatory process and thereby reduces costs. However, under the proposed approach service providers and the regulator will incur costs of two distinctly different forms of regulation running in parallel.

ENERGEX believes that the operation of two alternative forms of regulation would introduce greater complexity into the national energy regulatory framework which is inconsistent with the Productivity Commission's recent recommendation for the AER to examine ways to reduce the cost and complexity of regular access reviews for determining price/revenue caps (see the Productivity Commission's report "Annual Review of Regulatory Burdens on Business: Social and Economic Infrastructure Services, September 2009).

At this stage of the AEMC's Review, ENERGEX considers that the TFP methodology as currently specified in partial form will increase administrative/regulatory costs without providing a clear view of how stronger performance incentives and rewards will be created for service providers. As a result, ENERGEX remains of the view that insufficient evidence has yet to be presented that the introduction of TFP as a form of regulation will contribute to the NEO/NGO.

2. INTRODUCTION

ENERGEX welcomes the opportunity to provide comment on the AEMC's Design Discussion Paper. However, the provision of comments on this paper should not be interpreted in any way as support for the introduction of TFP regulation. ENERGEX remains opposed to the introduction of TFP regulation for the reasons outlined in our previous submissions, however we recognise the opportunity to influence the design and thereby minimise the potential impact on our business should the AEMC Review determine there is merit in the TFP proposal.

In addition, ENERGEX has provided comments on the AEMC's *Perspectives on the Building Block Approach* paper and the Network Advisory Services' (NAS) *Issues in Relation to the Availability and Use of Asset Expenditure and Related Information for Australian Electricity and Gas Distribution Businesses.*

3. THE DESIGN DISCUSSION PAPER

The following sections provide comments on the AEMC's Overview of TFP Design (chapter three) and the further details of the TFP design provided in chapters' four to eight of the paper. Given the paper is scoping in nature ENERGEX has prepared broad comments on the proposed design. Responses to the specific questions raised by the AEMC are provided in an attachment.

3.1 Applying a TFP Methodology

ENERGEX agrees that a prescriptive approach whereby principles, mechanics, rights and obligations and procedural requirements are incorporated into the NER/NGR, as has occurred for the building blocks methodology in the new Chapters 6A and 6 of the NER, provides greater certainty and transparency to stakeholders. As the primary concern of service providers is their ability to recover efficient costs, having regulatory certainty is critical.

The proposed opt in/opt out arrangements at the discretion of the service provider (with no regulator approval required) is supported and offers a level of flexibility regarding the alternative forms of regulation. Service providers may be more likely to select a TFP methodology, despite the inherent uncertainty associated with the new regulatory approach, if they have the ability to return to the building block methodology.

However, the proposed opt in/opt out arrangement will increase the overall complexity of the NER/NGR regulatory frameworks and expose the process to gaming by service providers who will inevitably select a regulatory approach that they expect will deliver a more favourable commercial outcome. This may result in additional administrative costs for the AER and service providers as the gaming plays out. The Brattle Group's paper issued in June 2009 acknowledges that there is scope for cherry picking by service providers with the introduction of a TFP methodology.

The opt in/opt out arrangements may also result in broad heterogeneity in the service providers being regulated under the TFP form of regulation, which may require the

regulator to take greater account of business-specific differences when setting the X factor.

ENERGEX supports the fixing of the principles and mechanisms of the TFP methodology for the entire regulatory period as this provides regulatory certainty and is consistent with the existing building block approach. However, to the extent that a steady state does not exist and/or a TFP methodology does not account sufficiently for variations in expenditure profiles, service providers that opt to be regulated under a TFP approach will bear these risks. ENERGEX notes that, in its experience, variations in expenditure profiles are invariably upward. Moreover data issues may lead to a lack of robust outcomes for those service providers.

3.2 Calculating the TFP Growth Rate

3.2.1 Formula specifications

ENERGEX considers the inclusion of input and output specifications and the method to calculate growth rates should be set out in the NER/NGR given the high sensitivity of TFP growth rates to the specifications selected and the methodology used to calculate growth rates, as concluded by Economic Insights. Moreover, defining inputs, outputs, weightings and the growth rate methodology is likely to be contentious; ENERGEX notes that there are differences of opinion between Economic Insights (EI) and Pacific Economics Group (PEG) on the output and input specifications and weightings (see next section and the answers to specific AEMC questions for further discussion).

Nevertheless, ENERGEX considers that the methods used to calculate the TFP growth rates are amenable to being set out in the NER/NGR once the technical specifications are determined.

A more pressing concern, as expressed in ENERGEX's previous submissions, is that all service providers will be required to provide TFP-related data regardless of whether they elect to be regulated under a TFP approach. ENERGEX believes that any such requirement will increase the administrative/regulatory burden on service providers (in addition to the costs already and potentially still to be incurred in the development of the TFP methodology). As a result, greater clarity is needed around information requirements for service providers to assess the additional costs that may be involved. While data collection and reporting was not considered by the Design Discussion Paper, it should be a key driver in the specification of inputs, outputs and weightings to minimise costs.

This administrative/regulatory cost issue must be addressed by the AEMC in its assessment of the TFP methodology in Stage 1 of its review. The review should be cognisant of the potential for increasing information requirements imposed on service providers under the national energy framework, such as the Regulatory Information Order (RIO).

The AEMC notes that only an index number approach will be used to calculate TFP growth rates, that is there will be no econometric estimation or programming. While broadly agreeing with the AEMC's arguments in support of an index number approach, ENERGEX notes that econometric studies can contribute to the development of more robust TFP estimates through providing estimates of the

significance of exogenous variables. This is likely to be of particular relevance when the regulator makes business-specific adjustments to the X factor in order to minimise arbitrariness in any such adjustments.

ENERGEX agrees that if a service provider elects to be subject to a rolling X Factor under the TFP methodology, then it is appropriate to amend the input and output weights annually to improve the accuracy of the TFP growth rate. ENERGEX sees no reason why a rolling X Factor should not be available as an option for a service provider from the first regulatory period given that the service provider is best placed to judge what suits its operational circumstances.

3.2.2 Output measurement

Another concern with the application of TFP is the treatment of inter-temporal issues. The full benefits (i.e. output) of a network investment will be derived over the long life of the distribution assets. This creates a timing mismatch between cost incursion and benefit realisation. This effect may be amplified by the cyclical nature of large capital investment programs, which may nullify any smoothing of the mismatch if investment was relatively constant. The discussion paper acknowledges that there are significant timing issues involved with investment in distribution networks.

As noted by the AEMC, the TFP index approach also fails to recognise the benefit or output associated with increased system security. Moreover, system security may reflect different operational and geographic characteristics of networks. ENERGEX has been required to meet an N-1 security standard (for bulk and major zone sub-stations and for our sub-transmission system) on its network since the Electricity Distribution and Service Delivery for the 21st Century in 2004. A large component of ENERGEX's forecast expenditure over the 2010-15 period is directed to meeting this standard. ENERGEX agrees with the AEMC that this issue of the inputs-outputs disconnect needs to be considered more thoroughly and resolved as it represents a fundamental weakness of the TFP methodology.

The AEMC proposes to exclude service quality as an output measurement and rather address quality issues through the existing service quality incentive scheme under the NER. ENERGEX notes that this issue cannot be considered in isolation from input quality changes. Assuming input and output quality changes are positive over time, then only adjusting for quality in the outputs not inputs will introduce a distortion into the TFP formula.

3.2.3 Data source and adjustments

ENERGEX supports the minimum time period of eight years of data being required before a TFP methodology could be applied to revenue determinations. Such a time frame is broadly comparable with the historical data sets currently being used for building block revenue determinations under the NER. However, technological change is not smooth over time so the issue could arise that the long term historical industry growth rate is not the best indicator of productivity potential over the next regulatory period. On the other hand, forward consideration of the potential productivity effect of new technologies is very problematic.

ENERGEX supports the regulator being required to use audited data provided by service providers. However, depending on the TFP specification, the auditing may

need to be focussed on network (for example counting physical quantities) not financial (for example checking revenue shares) data. Given the importance of data quality to the TFP methodology, further guidance on the type of auditing envisaged is necessary.

The non-inclusion of TFP data for any businesses outside the jurisdiction of the NER/NGL is also supported. However, recognising the imprecision or 'art' inherent in estimating TFP growth rates, the use of international data may act as a reasonableness check on Australian TFP estimates once constructed.

The AEMC proposes that the regulator may make adjustments to the data provided by service providers to improve consistency (for example, due to different service classifications) and to adjust certain years for exceptional circumstances. According to the AEMC, any such adjustments must be made in accordance with the regulator's guidelines and be transparent. In response, ENERGEX notes that, there is a large risk of arbitrary adjustments being made to the data unless the NER/NGR provides guiding principles for data adjustments. ENERGEX considers that there is likely to be non-trivial variability in annual historical TFP estimates which will regularly raise the issue of data adjustments. Clearly a lack of transparency and arbitrariness in the data adjustment process will undermine the integrity of the TFP methodology.

In relation to TFP data integrity, ENERGEX agrees with the AEMC that a preferable approach to the regulator 'cleaning up' data is for data to be supplied by service providers on the same basis and subject to the same rigorous and detailed definitions in an agreed template format (leaving to one side ENERGEX's concerns about the extra regulatory burden entailed). The regulator 'cleaning up' data simply introduces further subjectivity into the development of TFP growth rates even if the adjustments have merit. This issue also relates to the possible back-casting of historical expenditure data for TFP purposes, which is discussed further below in the context of the NAS paper.

There will be no normalisation of data for operating environment differences under the proposed TFP methodology on the assumption that this will have a price level not price growth impact and only the latter is relevant for TFP regulation. On the same grounds, there will be no adjustments for economy of scale effects. In ENERGEX's view, there are likely to be a large number of operating environment factors working in different directions and at different times for individual service providers. For example, greater network density can provide both scale and scope economies which may favour extensive or rapid uptake of new technologies. As far as ENERGEX is aware, no evidence has been provided so far during the AEMC's Review that these differences will be substantively reflected in only the price level. Consequently, it would appear to ENERGEX that this is likely to be a further risk any service provider would bear in opting for the TFP form of regulation.

The regulator would have the option to decide whether to use an average annual growth rate approach or a regression-based trend method in calculation of the TFP growth rate. ENERGEX notes that the average annual growth rate approach is more susceptible to 'end point' problems (eg the starting or end year index value being an 'outlier'), which may require data analysis that seeks to control cyclical effects (ie peak-to-peak estimates of TFP growth). On the other hand, depending on the data, the choice of method can lead to non-trivial differences in the estimated average TFP growth rate.

3.3 Setting the Initial Price

The design discussion paper presents a hybrid approach with the application of:

- a partial building block approach in setting the initial price/revenue level; and
- TFP approach to determine the price/revenue price path over the regulatory period.

While service providers would not have to forecast the price/revenue level for the entire upcoming regulatory period, in ENERGEX's view, forecasts will be necessary for the final years of the preceding regulatory period in order to ensure the initial price level is accurate.

In contrast, it would appear that the AEMC envisages the regulator will be able to determine whether actual expenditure data for year three of the preceding regulatory period is a suitable proxy for the year five data (assuming a five year regulatory period) without adjustment. As indicated by the AEMC, this decision will ultimately be based on an assumption about whether historical data is a reasonable indicator of future costs. This is concerning given that NAS was "not able to draw any conclusions about the degree of stability of capital and operating expenditure over time or the extent to which past expenditure provides a reasonable indication of forecast expenditures".

As previously noted, ENERGEX does not consider the energy distribution sector to be in a steady state. Advanced metering, smart networks and an Emissions Trading Scheme, which will be rolled out in the short to mid- term, represent significant impending changes to the industry.

The AEMC appears to consider that if the regulator were to err in setting the initial price level, which would be revealed within the first year or two of the new regulatory period, one of the mechanisms such as the capital module, cost pass through or off ramps could be applied in mitigation. In ENERGEX's view, the establishment of the initial price level will be a critical element of the TFP methodology and the proposed design will expose any service provider to significant regulatory risk for which it is likely to be very difficult to mitigate unless a specific off ramp is developed in relation to regulatory error in setting the initial price level. This is a sufficiently important issue that an initial price level off ramp should be specified in the NER/NGR, which allows for reconciliation between the expected and actual initial starting price.

3.4 Additional Design Terms

ENERGEX recognises that a number of safeguards offered under the building block approach should extend to a TFP methodology with the exception of an efficiency carryover mechanism. Given the uncertainty of a new regulatory approach and the lack of a steady state, the additional design terms may provide some flexibility (although at the discretion of the regulator) and thereby mitigate certain risks associated with the take-up of a TFP methodology.

ENERGEX notes that the length of the regulatory period will impact the cost control incentives, whereby the longer the period the greater the incentives. The lack of an efficiency carryover mechanism under the TFP methodology would appear to require a longer than 5 year regulatory period in order to provide additional incentive for

regulated businesses to continually strive to achieve efficiency gains. A longer (than 5 years) regulatory period is consistent with the current provisions in the NER/NGR.

ENERGEX notes that off ramps, required by the regulator, could relate to profitability and hence will affect incentives under TFP form of regulation. However, this important issue is not addressed at all in the paper even though it is a fundamental aspect of the TFP design.

ENERGEX supports the continuation of the service target performance incentive scheme and the demand management incentive scheme under a TFP methodology given the TFP approach does not take into account changes in service quality. It is also the case that the price cap nature of the TFP methodology is unlikely to create strong incentives for demand management. These discrete add-on modules may address service providers' motivation to reduce costs by reducing service quality and/or any weak incentives to reduce outputs such as peak demand.

3.5 Price Path under a TFP Methodology

ENERGEX supports the proposed formula for determining X, which importantly assumes that the change in input prices for the industry is not the same as for the economy as a whole (as reflected in the CPI). In ENERGEX's recent experience, input prices have far outstripped general inflation given skilled labour shortages and commodity-related price spikes in key materials inputs.

ENERGEX agrees that further work and consultation with industry would be required to determine the most appropriate measure of industry input price growth and that any such measure would need to be prescribed in the NER/NGR.

It seems reasonable to use the producer price index as the measure of economy wide input price growth. However, the economy-wide productivity index to be used in the TFP formula is not identified in the design example.

The X factor can be adjusted by the regulator if it considers there is a significant difference in the productivity growth potential of a service provider compared to industry TFP. However, it would appear the only guide for any such adjustment is the NEO/NGO and relevant pricing and revenue principles. In ENERGEX's view, such high level guidance will provide scope for the exercise of regulatory discretion with potentially very large effects on service providers' future expected profitability. This compares with the more detailed guidance provided to the AER for its assessment of opex and capex under existing building blocks regulation. Additional guidance regarding the exercise of regulatory discretion in this area will be required.

4. PERSPECTIVES ON THE BUILDING BLOCK APPROACH

ENERGEX is in broad agreement with the main findings of the AEMC's paper. In particular, the main benefit reported by participating stakeholders that the building block approach is" a relatively straight-forward, stable, certain and understandable process which yields sufficient incentives for service providers to seek cost efficiencies". This view is likely to reflect familiarity with this form of regulation and the associated regulatory certainty provided, which is important to ENERGEX and other distributors.

In this regard, the recent reforms to Chapters 6 and 6A of the NER were generally supported and ENERGEX concurs that the new NER provides greater transparency, certainty and accountability of the building block approach, as applied by the AER. However, the new reforms have only been operating for a very short period (for example, ENERGEX is yet to complete its first revenue determination under the new Chapter 6) so it is too early to comment authoritatively on the operation of the new framework.

ENERGEX also agrees with the identified drawbacks of the building block approach, which were considered to be failure to cater adequately for innovation, the risk that the regulator may set the efficient prices too low leading to insufficient returns and that the regulator is exposed to information asymmetry.

In relation to the information asymmetry issue raised by regulators, ENERGEX notes that the AER has strong legislated powers to obtain the information it needs to undertake its functions through RIOs and Regulatory Information Notices (RIN). Moreover, under the new national energy framework, the AER will have access to cost information for a range of electricity distribution and transmission businesses, which will allow it, to a certain extent, compare costs across similar businesses which may assist in dealing with information asymmetry.

ENERGEX considers that the building block approach does not provide strong incentives for innovation given this may entail higher risk projects than traditional regulated service provision and which are not consistent with the regulated rate of return. Regulators may also be unwilling to approve the inclusion of forecast expenditure on innovative projects in the cost building blocks in light of uncertain project outcomes compared to traditional network expenditure. On the other hand, the forward looking nature of the building block approach allows distributors to identify and propose expenditure on new regulated services. Alternatively, unregulated service opportunities could be pursued subject to reasonable ring-fencing and cost allocation requirements being imposed by the regulator.

Given the significant emerging challenges for electricity distribution networks presented by environmental/climate change polices and new network technologies, ENERGEX considers it will be very important that the building block framework facilitates distributors' responses to these challenges.

5. NAS - ISSUES IN RELATION TO THE AVAILABILITY AND USE OF ASSET, EXPENDITURE AND RELATED INFORMATION FOR AUSTRALIAN ELECTRICITY AND GAS DISTRIBUTION BUSINESSES

The NAS report notes that the quality and comparability of publicly available capital and operating expenditure from the mid 1990s to the present day is variable both between distribution businesses and over time for individual businesses.

The NAS report conclusions also support ENERGEX's view that there is uncertainty about the ability of past expenditure to predict future expenditure. This finding questions the key assumption that the electricity distribution industry is in a steady state. NAS also concludes that they have been unable to determine the nature, extent and timing of significant capital replacement of aging distribution assets across electricity distributors.

The report notes the AER's ability to request information from distribution businesses through RINs or RIOs. ENERGEX reiterates that requests for information in a specific format may be costly and moreover that distribution businesses may have major difficulties providing information sought due to differences such as:

- Categorisations of distribution services
- Allocation of shared cost between services
- Approaches to capitalising and expensing expenditure
- Legislative and regulatory obligations.

In this regard, ENERGEX would be particularly concerned if it were required to attempt to back-cast historical expenditure information into a specified standard format for TFP purposes. This would likely create significant uncertainty around the integrity of the data. It would appear that if a TFP methodology were to be introduced, a new national TFP data set would be required, although ENERGEX has previously expressed its strong concern about the significant additional regulatory compliance costs this would entail.

6. RESPONSES TO THE AEMC'S SPECIFIC QUESTIONS

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

ENERGEX does not have a strong view on whether the EI or PEG approach should be adopted to specifying inputs, outputs and weightings, noting that the EI approach appears more intuitively appealing and practical at this point in time. This is because ENERGEX gives some weight to the view that the current revenue shares may not reflect outputs delivered to customers (particularly residential customers); that is there may be some disconnect between tariff structures and outputs due to metering constraints and retail price regulation.

In addition, due to differences in tariff structures across electricity distribution service providers, using billable outputs and revenue weights may result in an unrepresentative estimate of TFP growth being calculated. Clearly, any TFP estimates that are derived need to be representative of the service providers to which the X Factor will be applied (regardless of whether an industry-wide X Factor or multiple X Factor approach is adopted).

ENERGEX notes that the correct specification of inputs and outputs (using either the EI or PEG approaches) continues to be a source of contention in a New Zealand context. In this regard, the New Zealand Commerce Commission proposes to use the EI approach for its latest Reset Default Price Path, although it used the PEG approach as a cross-check for the EI-based TFP estimates.[1]

While the specification of inputs, outputs and weightings should be key, data collection and reporting needs to be considered in minimising regulatory costs.

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

The criteria outlined in the paper (on pages 26 and 27) appear appropriate.

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?

ENERGEX agrees with the advantages and disadvantages of the single and multiple X factors approaches that are identified by the AEMC.

ENERGEX believes it would be preferable to establish groups of cohorts to reflect different operating conditions such that service providers' productivity is benchmarked against similar businesses. However, the population of some groups could be very small resulting in one or two businesses determining the benchmark TFP level which reduces incentives to operate efficiently.

Moreover, ENERGEX is not sure which of the four sub-groups proposed by the AEMC its network would be classified as given it has high density urban and generally high density rural components. Consequently, ENERGEX agrees with the

[1] New Zealand Commerce Commission, Draft Decisions Paper: Initial Reset of the DPP, September 2009, pp 66-94.

AEMC that the assignment of service providers to one of the four proposed sub-groups is likely to be contentious.

On balance, ENERGEX supports a single X factor on the grounds of simplicity and because it is likely to be more stable (it has lower potential than multiple X factors to be subject to the influence of individual service providers). In addition, and subject to our previously stated concerns about process, the proposed TFP design also provides for business specific adjustments to be made to the X factor.

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

ENERGEX considers that it is very difficult to assess the impact of the design example on service providers' incentives to improve performance because the details of key elements of the design are yet to be sufficiently developed. In particular, it is not possible to determine from the proposed design for how long and to what extent efficiency improvements (reflected in higher profitability) will be retained by service providers because the existence or otherwise of profitability off-ramps and the approach to Po adjustments are to be determined by the regulator (not included in the Rules) at some point in the future.

In this regard, the Expert Panel on Energy Access Pricing commented as follows regarding the assessment of incentives under building block and TFP price control mechanisms:

> The strength of the incentives under any price control setting method depends on the extent to which the arrangement allows a firm to earn more than the target rate of return applied at the time the price control was determined, and the extent to which those returns are able to be retained by the firm in subsequent regulatory periods.[2]
>
> And
>
> There is no basis for concluding that one approach has intrinsically stronger or weaker efficiency incentives than the other – this depends on the detailed parameters adopted under any particular application of either model.[3]

Cost of capital issues also are not addressed in the design example. ENERGEX considers that the TFP form of regulation will result in a higher systematic risk for service providers as regulated prices will be linked to economy wide productivity trends rather than firm specific productivity.

What would be the impact on service providers' ability to recover efficient costs under this design example?

As the TFP approach is backward looking in that capital and operating expenditure is based on actual not forecast costs in setting Po and the X factor is industry-based not business-specific, ENERGEX considers there will be a materially higher level of risk regarding the ability of the service provider to recover its efficient costs. As a result, service providers being regulated under a TFP approach are likely to face a

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[2] Expert Panel on Energy Access Pricing, Report to the Ministerial Council on Energy, April 2006, p102

[3] Ibid, p103.

higher cost of capital and/or may have a greater reliance on the additional design terms, for example the cost pass through mechanism.

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

ENERGEX considers the use of forecast costs diminishes the purpose of introducing TFP as the underlying objective of TFP is not to require forecast costs. However, given actual expenditure data will only be available with a lag (eg actual data may only be available for year three of the preceding five year regulatory period), forecasts will be necessary to escalate actual expenditure up to the final year of the preceding regulatory period to address any late period uplifts in expenditure and so set an appropriate initial price level.

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

The length of the regulatory period should be determined by the service provider although it must be a minimum of five years. This approach is consistent with the building block methodology. The strength of the cost control incentive increases with a longer regulatory period as service providers are able to retain any profits due to out-performance against the X factor for the period. Moreover, there will be no efficiency carryover mechanism under the TFP methodology.

It is assumed any efficiency benefits will be shared with customers at the time of the regulatory reset (price/revenue caps are reset to efficient levels) unless a profitability-related off ramp dictates that this sharing occurs sooner.

There are also risks to opting for a longer regulatory period in that if price/revenue caps are set at a level below that necessary to achieve efficient cost recovery, service providers will incur a loss for that period.

Are any amendments to the current provisions to ensure compatibility with a TFP base framework?

ENERGEX is not aware of any compatibility issues.

How can the possibility of double counting cost pass through events under a price path with a rolling X be addressed?

The possibility of double counting may not be able to be completely eliminated. However, the broader the cross-section of regulated businesses that are used to calculate the rolling X factor, the lower the probability that any material double counting will occur. In other words, the influence of one regulated business' input price change due to the occurrence of a cost pass-through event will be non-material in the calculation of the rolling X factor. In theory, it should only be industry-wide input price events that should be reflected in the rolling X factor. In ENERGEX's view, the difficulty facing the regulator attempting to separate the effect of a business specific cost pass-through event on the rolling X factor will most likely lead to an arbitrary outcome.

ENERGEX agrees that a cost pass-through mechanism would be particularly beneficial for a service provider operating under a fixed X in the price path formula.

As noted in the discussion paper, in the absence of a cost pass-through mechanism in the TFP methodology, the costs associated with the pass through event will only be taken into account when the Po is reset at the start of the subsequent regulatory period. In other words, if the service provider is required to take on additional cost risk over the course of the regulatory period for which there is no compensation reflected in the regulated rate of return, it will diminish the attractiveness of the TFP form of regulation relative to the building block approach.

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?

ENERGEX believes that a capital module would be required given the questionable ability of the TFP methodology to adequately compensate service providers for step changes in expenditure.

However, the AEMC notes that the regulator would need to be satisfied that the expenditure is outside the scope of the cost drivers that are taken into account in setting the X factor. A reference to 'extraordinary significant increases' in capital expenditure as a precondition for a capital module to be incorporated in a regulatory proposal is also made.

ENERGEX is concerned that these views fail to recognise the heterogeneity of Australian electricity distribution networks and the different age, growth and expenditure profiles of these networks. In the absence of a capital module, ENERGEX would face significant business risk if it were to be regulated under a TFP form of regulation given its relatively fast growing network (in customer number and maximum demand terms) in an Australian context.

Further work would clearly be required in formulating a capital module in an Australian context and in ENERGEX's view such a module is critical to the TFP design.

Assuming a capital module were to be developed, ENERGEX agrees that the use of actual expenditure amounts that are in addition to the expenditure covered by the growth rates is more consistent with the underlying objective of TFP of not requiring forecast costs. However, in practice, this may be unduly time consuming to administer (both for the regulator and service provider) and could be avoided by the use of forecasts.

ENERGEX notes that the contingent project mechanism which is applied in electricity transmission determinations is not generally suitable for electricity distribution given the much greater volume and smaller scale of projects. It also requires identification of projects at the start of the regulatory period and so does not address the problem of large unanticipated projects emerging during the period.

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

The AEMC notes that TFP off ramps may be proposed by the service provider or required by the regulator.

The inclusion of an off ramp mechanism would be reasonable as a risk mitigation tool for service providers given they will have had no prior exposure to this form of regulation. Off ramps can also be used by the regulator to establish profitability

(return on earnings) caps and associated earning sharing mechanisms with a service provider's customers (as occurs in the United States (US)).

The AEMC notes that any decision by the regulator to request the inclusion of an off ramp mechanism would need to have regard to the NEO/NGO and the revenue and pricing principles. However, ENERGEX would consider there is a need to put in place principles in the NER/NGR around the design of any off ramp mechanisms. This is because such mechanisms could substantially affect the performance incentives created by the TFP methodology.

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?

Service providers should be able to select whether a fixed or rolling X factor is applied. Under the building block methodology X factors are fixed at the beginning of the period and are generally used as a revenue smoothing device. However, under the NER, the application of X factors has a Net Present Value (NPV) neutral impact on a service provider's forecast revenue stream.

In contrast given that the application of X factors under TFP will have a real NPV impact and that circumstances can change significantly over a regulatory period (eg industry input prices) service providers should be able to choose between a rolling and fixed X. This decision will likely reflect a service provider's appetite for risk, including how the X factor will interact with other TFP design elements such as the capital module, cost pass through mechanism and off ramps, which will ultimately determine its expected returns.

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

There may be some merit in allowing business specific adjustments recognising that this will add significant complexity and a strong element of regulatory subjectivity to the scheme. This should be considered in the context of other design features; that is whether the industry definition allows for a single TFP growth rate factor or multiple TFP growth rate factors reflecting different operating environment conditions. TFP is underpinned by benchmarking so to the extent that specific adjustments are required, this may diminish the attractiveness of a TFP methodology.

The AEMC proposes to allow firm-specific adjustments for: (a) business specific circumstances which may affect the ability of the industry TFP rate to reflect the productivity potential of the business; and (b) converging effect where a higher performing business may be unnecessarily penalised under an average TFP growth rate.

In relation to (a), it seems reasonable to have such a mechanism given future uncertainties about the productivity potential of service providers. In this regard, it would appear from the US experience that business-specific 'stretch' adjustments relative to the X factor are often an important part of the TFP regulatory arrangements.[4] It may also be the case that business specific circumstances may constrain the long run productivity potential of those service providers with atypical

[4] A.J. Goulding, Experience with TFP methods in regulation of North American electric utilities, Presentation to Australian Energy Market Commission, 18 November 2008

networks (ie those least like the 'average' network reflected in the X factor growth rate).

In relation to (b), the AEMC may be implying that there currently exists material differences in productivity levels across service providers and that these levels are not due to fixed effects or operating conditions. The primary candidate is, therefore, the existence of significant differences in technical inefficiency resulting from decisions under managerial control (i.e. some providers are simply managed better than others). Managerial decisions could be related to extracting static efficiencies (operating existing capital and labour more efficiently) or the take-up of capital or innovations employed by other businesses. Innovation strategies of firms differ (some are early adopters, others adopt later on the diffusion curve) with no clear implications for TFP assuming optimal decision making for each business.

In addition, there appears to be an underlying assumption that better performing firms may be disadvantaged by the relatively 'easy' catch-up opportunities for previously poorer performing firms. However, better performing firms are usually better performers for a reason. Convergence is not automatic - it often happens through the exit of firms and that mechanism for productivity growth is excluded from the regulatory environment. Therefore, an adjustment for the starting productivity level may not be necessary, particularly where it would be necessary to decompose the starting productivity gap into those factors that are fixed and those that are more amenable to change, a very difficult and subjective task.

ENERGEX strongly agrees that further work would be needed to develop the framework governing how the regulator determines the exact amount of any business specific adjustments.