Address all correspondence to
Locked Bag 14090
Melbourne Victoria 8001

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Dr John Tamblyn
Chairman
Australian Energy Market Commission
PO Box A2449
Sydney South NSW 1235

Email: submissions@aemc.gov.au

Dear Dr Tamblyn

AEMC'S REVIEW INTO THE USE OF TOTAL FACTOR PRODUCTIVITY FOR THE DETERMINATION OF PRICES AND REVENUES – PUBLIC CONSULTATION ON DESIGN DISCUSSION PAPER

As part of its broader Review into the use of Total Factor Productivity (**TFP**) for the Determination of Prices and Revenues (**Review**), the Australian Energy Markets Commission (**AEMC**) has prepared a Design Discussion Paper (**Discussion Paper**) which explores various TFP design options. CitiPower, ETSA Utilities and Powercor Australia (the **Businesses**) understand that the objective of the Discussion Paper is to facilitate discussion amongst interested parties and that proposals discussed in the report should not be construed as the AEMC's *"preferred"* design.

The Businesses have reviewed the Discussion Paper and welcome the opportunity to respond to the issues raised by the AEMC. Before doing so, the Businesses would like to take the opportunity to outline some of the more general concerns they have with the proposal to amend the Rules to enable TFP to be used as an alternative to the building block approach. The remainder of this submission has therefore been divided into two sections. An appendix is also attached to this submission which sets out the Businesses' views on the key design elements canvassed in the Discussion Paper.

General concerns with the proposal to amend the Rules to allow TFP

In the Businesses' original submission, dated 27 February 2009, the Businesses identified a number of concerns that they had with the proposal to allow the TFP approach to be used in regulatory determinations. These concerns principally stem

from the recognition that under the TFP regime Distribution Network Service Providers (**DNSPs**) would be subject to a greater level of risk than they would otherwise face under the building block approach and could conceivably recover less than the efficient cost of providing distribution services.

The conclusions reached by both the Brattle Group and Economic Insights in their respective reports prepared for the AEMC, have served to add to, rather than detract from, the concerns outlined in the Businesses' original submission. The key messages the Businesses take from these reports are:

- there is likely to be no difference between the incentives faced under the two regimes;[1]
- the data currently available to regulators is *"not sufficiently robust to support TFP analysis of the rigour required to be the primary determinant of regulatory pricing and revenue decisions"*[2] and even if steps were put in place to remedy this, it could take up to ten years before the data that is collected is of a standard that could be relied upon; and
- the assumptions made about how TFP should be measured can have significant implications for the measurement of TFP, with estimates developed using existing Victorian electricity distribution industry data indicating that the TFP measures could range from -0.3 per cent to 2.2 per cent depending on the assumptions made.[3] The breadth of this range is, in the Businesses' view, disconcerting and highlights the risk that DNSPs could face under TFP.

These findings raise concerns about the value in amending the Rules to allow an approach that offers no additional incentives to that proffered by the building block approach and has the potential to result in DNSPs being unable to recover the efficient cost of providing their services.

The proposal to amend the Rules, to allow an approach that is predicated upon an assumption that the industry is in a steady state, at a time when the National Electricity Market (**NEM**) is on the cusp of a structural transformation, raises further questions about the imperative to amend the Rules at this point in time. As the NEM makes the transition toward a lower emissions intensive generation mix, DNSPs will face a range of challenges, not least of which will be:

- the unprecedented level of investment they will be required to undertake in their respective networks over the next ten years to facilitate both the change in generation mix brought about by the Carbon Pollution Reduction Scheme and the expanded Renewable Energy Target and the rollout of smart meters; and
- the higher input costs that are likely to flow from increased demand for key inputs.

The investment and input cost challenges that DNSPs are expected to encounter over the next ten years, suggest that the risk of being unable to recover the efficient cost of providing distribution services will be heightened going forward. To the extent that

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1 Brattle Group, Incentives Under Total Factor Productivity Based and Building-Blocks Type Price Controls, June 2009.

2 Economic Insights, Assessment of Data Currently Available to Support TFP-based Network Regulation, June 2009, p10.

3 Economic Insights, Energy Network Total Factor Productivity Sensitivity Analysis, June 2009, p13.

this occurs, investment in the network is likely to be adversely affected which could have broader implications for the overall safety and reliability of the NEM.

The experience that the Power and Water Corporation in the Northern Territory has had over the last five years demonstrates the risks that a regulated entity operating under a TFP regime will face in an environment of rising costs and increased demand for network investment. According to estimates contained in Power and Water Corporation's Initial Regulatory Proposal, the application of this regime resulted in the company failing to recover over $60 million in operating expenditure and $80 million in capital expenditure in the first four years of the five year regulatory period.[4] The scale of these losses brings to the fore the risk that DNSPs will face if this steady state based TFP approach is applied in an environment where the historic trends in costs provide no indication as to the future cost trends.

Further, the Businesses are not aware of any uncontentious application of TFP in the electricity supply sector. Particularly, the Businesses would note the current debates in New Zealand and the absence of TFP in Ofgem's current review of best practice economic regulation in the United Kingdom.

The risks outlined above suggest that before making a recommendation to the MCE that the Rules be amended, the AEMC will need to carefully consider whether the TFP approach will:

- offer any real benefits over and above those already provided under the existing building block approach;
- actually promote the National Electricity Objective (**NEO**); and
- be consistent with the Revenue and Pricing Principles set out in the National Electricity Law.

Issues arising from the Design Discussion Paper

Turning to the issues raised within the Discussion Paper, the Businesses would, at the outset, acknowledge the AEMC has addressed a large number of the TFP design related issues identified in the Businesses' original submission on the proposed design. While a number of the Businesses' concerns have been addressed in the proposed design, the proposed design has raised a number of new issues that, in the Businesses' view requires further consideration. The specific issues that the Businesses believe warrant further consideration at this time include:

- the point in the regulatory process that Businesses will be required to decide whether to apply the building block approach or the TFP approach;
- the manner by which differences in the productivity potential of regulated network service providers will be taken into account in the measurement of the X factor;
- the method by which the initial price cap will be established and the capital and operating expenditure trigger mechanisms that have been proposed to ameliorate the risks surrounding variations in expenditure;
- the assumption that the proposed TFP regime can operate in conjunction with other incentive schemes;
- the need to incorporate off ramps in the overall design; and
- the source of the data to be used in the calculation of TFP.

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4 Power and Water Corporation, Initial Regulatory Proposal 1 July 2009 – 30 June 2014, August 2008, p. 17.

Before setting out the Businesses' views on each of these design aspects, the Businesses would recommend that, as a general principle, that if the Rules are to be amended to allow TFP then the regulatory framework that underpins it should:

- be based upon the same propose/respond framework upon which the Rules are founded; and
- not accord the AER with any greater degree of discretion than it currently has under the Rules.

Decision point for use of building block approach or TFP

Under the proposed design outlined in the Discussion Paper, a DNSP would be accorded the discretion to determine whether it should be regulated under the TFP or the building block approach. The Businesses agree that it is entirely appropriate to accord discretion to DNPSs given the potential risks they could be exposed to under a TFP regime. There is, however, one aspect of the proposal that the Businesses believe warrants further consideration. That is, at what point in the regulatory process should a DNSP be required to make the decision.

If the manner in which the TFP regime were to be applied by the AER was well understood, then the Businesses would agree that DNSPs should, at the time they submit their regulatory proposal, be in a position to make an *informed* decision as to which approach should be applied. Given the lack of regulatory precedent in this area and the range of unique issues that will need to be considered under the TFP regime, the reality is that DNSPs are unlikely to be in a position to make an informed choice for some time. To overcome this issue, the Businesses believe that there may be some merit to allowing, at least for a transitional period:

- DNSPs to submit a regulatory proposal that is based on both the TFP and building block approaches;
- the AER to review the regulatory proposal under the two alternative approaches and making separate decisions under both alternatives; and
- DNSPs to make a decision as to which approach to utilise following the release of the AER's final decision.

The Businesses understand that this may give rise to some additional regulatory costs. However, these costs must be set against the value that would be derived from developing regulatory precedent in the area and providing further clarity on how the AER would deal with those design elements that are unique to the TFP regime (eg: the derivation of the initial price/revenue cap, the application of Business Specific Adjustment Factors and the operation of the capital expenditure related trigger mechanism). To the extent that this enables DNSPs to make an informed decision about which approach is most appropriate given their particular circumstances, then there will, in the Businesses' view, be benefit in allowing this to occur.

Accounting for differences in the productivity potential of regulated businesses

The manner by which differences in the productivity potential of DNSPs will be taken into account in the measurement of the X factor is an area of particular concern to the Businesses. In chapters 5 and 8 of the Discussion Paper, the following two options for dealing with these differences are considered:

- Option 1 – apply a single industry wide TFP measure to all DNSPs and account for any differences in the productivity potential of a particular DNSP through a Business Specific Adjustment Factor; or
- Option 2 – divide the industry into four groups on the basis of rural, urban, high density and low density operating conditions and account for any residual differences in the productivity potential of a particular DNSP through a Business Specific Adjustment Factor.

Given the significant difference between the operating conditions facing DNSPs servicing rural areas and those facing DNSPs operating in urban areas and the diversity of productivity opportunities available to these alternate groups of DNSPs, the Businesses are of the opinion that, at a minimum, the industry should be divided on the basis of rural and urban interests. Assuming this division were to be made then at least four DNSPs could be categorised as forming part of the rural sub group while seven DNSPs could be categorised as forming part of the urban sub group. Based on this breakdown, no single DNSP should be able to have a significant influence on either the rural or urban TFP measure. If this division were made then the effect of any difference in productivity potential arising as a result of differences in customer density, could be accommodated through either the normalisation of data used in the measurement of the rural or urban TFP or through a Business Specific Adjustment Factor.

The Businesses understand that manner in which the Business Specific Adjustment Factor would operate is yet to be determined and that the AEMC intends that further work be undertaken in this area. Given the importance of this design element, the Businesses would recommend that this issue be considered through a separate industry based consultative process. The Businesses would also recommend that if this were to become a feature of the final TFP design, then the Rules should clearly specify:

- the factors that the AER must take into account when determining the appropriateness of a Business Specific Adjustment Factor for a particular DNSP; and
- the principles to be applied by the AER when determining the magnitude of the Business Specific Adjustment Factor.

To encourage further transparency in this area, the AER should also be required to publish a guideline that sets out how it would calculate the adjustment required to address the differences in productivity potential arising from differences in operating environments, jurisdictional obligations, and/or ownership arrangements.

A final issue that is touched on only briefly in the Discussion Paper, relates to whether the data used in the industry based TFP measure should be normalised to account for differences in service classifications, operating environments, jurisdictional obligations, corporate objectives, ownership arrangements, technology, economies of scale and scope. In the Businesses' view, normalising the data used in the derivation of the industry based TFP measure will be critical to ensuring that differences in these factors across DNSPs do not have a significant influence on the industry wide TFP measure. Once the industry wide TFP measure is normalised, then consideration can be given to whether a Business Specific Adjustment Factor would be required to reflect a particular DNSP's circumstances.

Initial price/revenue cap and trigger mechanisms

Another design element contemplated in the Discussion Paper is that at the commencement of each regulatory period, the initial price/revenue cap would be reset through the application of the building block approach using a single year of historic costs. From a theoretical standpoint, allowing the price/revenue cap to be reset every five years will dilute a number of the incentives that the TFP approach would otherwise accord DNSPs. That said, the Businesses recognise that allowing the cap to be reset at the commencement of each regulatory period will afford DNSPs with some degree of protection in an environment where future costs are expected to diverge from their historic trend.

The principal concern that the Businesses have with the proposal described in Chapter 6 of the Discussion Paper is that the initial price/revenue cap would be set by reference to an historic estimate of operating and capital expenditure and would *not* therefore take into account any step changes in operating or capital expenditure that are expected to occur over the regulatory period. The Businesses understand that the AEMC envisages that these issues would be dealt with through the cost pass through and capital module trigger mechanisms described in Chapter 7 of the Discussion Paper.

In the Businesses' opinion, trigger mechanisms are not an effective way of dealing with step changes in expenditure that can be reasonably projected at the time the DNSP submits its regulatory proposal. In effect, reliance on these mechanisms will simply defer the AER's consideration of the issue from the determination stage of the regulatory process to a point in time within the regulatory period. The deferral of this consideration will give rise to additional regulatory costs for both the AER and DNSPs and depending on the time the AER takes to assess the DNSP's proposal and the number of times the provisions are being triggered within a regulatory period, could result in DNSPs incurring higher costs for a considerable length of time. If the regulatory costs, working capital requirements and risks arising as a result of the increased reliance on trigger mechanisms were taken into account, then it is possible that they would outweigh any claimed benefit of placing less reliance on business specific forecasts under the TFP approach.

The foregoing should not be construed as the Businesses rejecting the need for the cost pass through and capital module trigger mechanisms described in Chapter 7. To the contrary, the Businesses do see a role for these safeguards within the TFP framework. However, the Businesses do not believe that these trigger mechanisms should be relied upon to address issues that are foreseeable and measurable at the time the regulator makes its determination. Rather, the Businesses are of the view that the initial price/revenue cap should be based on the forward looking operating and capital expenditure that is expected to be incurred over the period. In the Businesses' view, this approach would reduce the risk that DNSPs would be unable to recover the efficient costs of providing the service and would therefore be consistent with both the NEO and the Revenue and Pricing Principles.

Finally, the Businesses note that in footnote 37, the AEMC has referred to the potential for a different rate of return to be applied by the AER under the TFP approach than it would otherwise apply under the building block approach. The basis

for this statement is not clear. If this is to be a feature of the final TFP design, the Businesses would suggest that further consultation be undertaken.

Interaction between TFP and incentive mechanisms

In Chapter 7 of the Discussion Paper, the potential for existing mechanisms to operate in conjunction with the TFP regime is discussed. It is in this context that the AEMC refers to the potential for the demand management and service standard incentive schemes to continue to operate within the TFP regulatory framework.[5]

The Businesses appreciate the imperative for ensuring that DNSPs have an ongoing incentive to manage demand and to improve service standards. However, it is not clear how the two schemes could, in practical terms, operate in conjunction with the TFP regime without penalising DNSPs for introducing service standard or demand management measures. The penalty arises under the TFP approach because the costs incurred in implementing these measures flow directly through to the input cost measure used in the derivation of the X factor while the output measure is either:

- unchanged in the case of the Service Target Performance Incentive Scheme since output is not measured on a service standard adjusted basis; or
- reduced in the case of the Demand Management Incentive Scheme to the extent that the measures are effective in reducing demand for the service.

In the absence of some form of complex adjustment being made to either the TFP measure or the S and D factors, a DNSP's overall efficiency relative to the industry measure would fall as a result of the interaction of these incentive schemes with the TFP regime. The complexity of the adjustments that would be required to address this issue, suggests that in practice the incentive mechanisms cannot, in their current form, operate in conjunction with the TFP approach.

Off ramps

Off ramps are another safeguard contemplated in Chapter 7 of the Discussion Paper. In the Businesses' view, the use of off ramps would undermine the incentive features of TFP. Businesses are of the opinion that they should be optional and the AER should *not* have the discretion to impose an off ramp on a DNSP.

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[5] The Businesses note that it would appear from the reference contained in footnote 59 that the AEMC has inadvertently referred to the Businesses' 27 February 2009 submission in support of the conclusion that the Demand Management Incentive Scheme and the Service Target Performance Incentive Scheme Standard could continue to operate in conjunction with the TFP approach. In response to the question posed in the AEMC's Issues and the Businesses actually stated:

> "Some provisions including those relating to incentive schemes such as the Demand Management Incentive Scheme and the Service Target Performance Incentive Scheme Standard can **not** operate as they currently do under a TFP approach. This is because the incentives under these schemes may potentially result in a DNSP being penalised under the TFP approach" [emphasis added]

Source of data to be used in the calculation of industry TFP

One issue that is not really considered in the Discussion Paper is whether the calculation of the industry TFP measure will be made having recourse to:

- data that has been collected by regulators to date; or
- data that is collected following the development of a new NEM wide database.

Based on the advice the AEMC has received to date from Economic Insights, the Businesses would expect the AEMC to be reticent to allow data that has been described as *"not sufficiently robust to support TFP analysis of the rigour required to be the primary determinant of regulatory pricing and revenue decisions"*,[6] to be used in the derivation of the industry TFP measure. If this is the case, then the Businesses would suggest that the eight year time series threshold referred to in section 5.2.5 of the Discussion Paper should define the source of the data that the threshold is to be applied to.

It is worth noting in this context that the Businesses agree with the recommendations contained in Economic Insights' report, entitled *Assessment of Data Currently Available to Support TFP-based Network Regulation,* that a new database should be established through a consultative process. In the Businesses' view, the involvement of DNSPs in this process will be critical to ensuring that data is collected in a uniform manner across businesses and should also ensure that the obligations imposed upon DNSPs are not too onerous.

Areas that warrant further consultation

Within chapters 5, 7 and 8 of the Discussion Paper a number of questions are posed about the appropriate specification of TFP, the measurement of inputs and outputs, the scope of the Business Adjustment Factor and the design of a capital expenditure based trigger mechanism. Given the significance of these issues, the Businesses would recommend that they be dealt with through a separate industry based consultative process involving the AEMC, the AER, DNSPs and other interested parties. In addition to addressing these issues, this consultative process could be used to:

- design a new NEM wide database and identify what inputs and outputs will be measured and collected; and
- determine how differences and changes in service classifications, operating environments, jurisdictional obligations, corporate objectives, ownership arrangements, technology, economies of scale and scope should be taken into account either in the measurement of the industry TFP measure or through the Business Specific Adjustment Factor.

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[6] Economic Insights, Assessment of Data Currently Available to Support TFP-based Network Regulation, June 2009, pg. 10.

Conclusion

The Businesses would like to thank the AEMC for the opportunity to participate in this process.

If there are any questions arising from this submission, then please don't hesitate to contact Brent Cleeve on (03) 9683 4465 or at bcleeve@powercor.com.au

Yours sincerely

Richard Gross
CHIEF EXECUTIVE OFFICER (Acting)

Appendix A. Summary of Businesses' responses to key design elements

Selection of TFP		
4.2.1	Sole discretion to be accorded to DNSP to determine whether TFP or building block approach to be applied.	✓ Given the risks that DNSPs could face under the TFP approach the Businesses agree that the decision to use this approach should be the DNSPs alone.
4.2.1	Decision as to whether to use TFP or building block approach to be made at the time the DNSP submits its regulatory proposal.	× The Businesses believe that there may be some merit in allowing two processes to run simultaneously for at least the first regulatory period to enable regulatory precedent to be established.
Calculation of TFP		
5.2.1	Inputs, outputs and weights to be used in the derivation of TFP to be prescribed in the Rules and to be subject to further consultation.	✓ The Businesses agree that the TFP specification should be prescribed in the Rules. The Businesses also agree that further consultation is required in this area.
5.2.2	The AEMC is currently contemplating either a single industry wide TFP measure that would be applied to all DNSPs or the division of the industry on rural/urban and/or high density/low density lines.	Given the stark differences in operating conditions faced by rural and urban DNSPs, the Businesses believe that, at a minimum, the industry should be divided on rural/urban lines and that: ▪ differences in customer density either be taken into account through the normalisation of the data used in the derivation of the TFP or through a Business Specific Adjustment Factor; and ▪ any other differences in the ability of a DNSP to achieve the group's productivity growth rate should be taken into account through the Business Specific Adjustment Factor.
8.2.2	Business Specific Adjustments	✓ The Businesses agree that there is a role for a Business Specific Adjustment Factor and that further work needs to be undertaken to establish the scope of this factor and how it would be implemented in practice.
Data to be used in the calculation of TFP		
5.2.2	Data to be based on businesses operating within the jurisdiction of the NEL and will therefore exclude overseas data and data from businesses operating outside the jurisdiction of the NEL	✓
5.2.3	AER to use audited data only	✓

5.2.3	AER to only make adjustments to audited data to: ▪ to remove the effect of exceptional circumstances; and ▪ adjust for structural differences (as opposed to operational differences) to improve the consistency of the data.	✓ The Businesses acknowledge that it may be necessary for the AER to make adjustments in circumstances where a DNSP has been subject to an exceptional event and that it may also be necessary for the AER to make adjustments over time to reflect changes in service classification. If such adjustments are to be made, then they should be done in a transparent manner and the results must be replicable.
5.2.5	Eight year minimum time series threshold	✓ Subject to the requirement that the threshold applies to data collected following the development of a new database and does not encompass existing data.
Initial Cap		
Chapter 6	Initial price/revenue cap to be set using single year of historic costs.	× The Businesses believe that if an initial cap is to be used, it should be based on forecast rather than historic costs. If historic costs are to be used then: ▪ consideration should be given to the expenditure incurred over the entire regulatory period; and ▪ the AER should not be accorded any greater degree of discretion than it currently has under the Rules.
Safeguards		
7.1.2	Cost pass through	✓ The Businesses agree that this is an appropriate safeguard to include in the TFP design. However, the Businesses would caution against relying on this to deal with step changes in opex that should otherwise be dealt with at the time of the regulatory determination.
7.1.3	Capital module / Contingent project	✓ The Businesses agree that a capital expenditure safeguard should also be included in the TFP design. The Businesses also agree that further consultation is required to determine how this safeguard would operate in practice.
7.1.4	Off ramps	× In the Businesses' view the inclusion of off ramps would dilute the incentives of the TFP regime. Off ramps should be optional and the AER should not be able to impose an off ramp on a DNSP.

Incentive Mechanisms		
7.2.1	Efficiency carryover mechanism not to operate in conjunction with TFP approach.	✓ The Businesses agree that the efficiency carryover mechanism is not consistent with the TFP regime and should not therefore form part of the final design.
7.2.2	Demand and service incentive schemes to continue to operate as they currently do under building block approach.	× The Businesses do not believe that in their current form these two schemes could, in practical terms, operate in conjunction with the TFP regime without penalising DNSPs.
Other design elements		
7.1.1	DNSPs to be able to propose a regulatory period in excess of five years.	✓
7.1.5	DNSPs to have discretion to use a rolling or fixed X factor	✓ In the Businesses' view the X factor should be fixed at the commencement of the regulatory period and should not be modified through a rolling X factor. If a rolling X factor is to be contemplated then a decision as to whether such an approach should be adopted should be at the discretion of the DNSP.