**Australian Energy Market Commission**

Level 5, 201 Elizabeth Street Sydney NSW 2000
PO Box A2449, Sydney South NSW 1235

**P** – 02 8296 7800
**F** – 02 8296 7899
**E** – aemc@aemc.gov.au

**ABN** 49 236 270 144
**www.aemc.gov.au**

Our ref: 09F502

16 April 2012

**Electricity Network Inquiry**
Productivity Commission,
GPO Box 1428
Canberra City ACT 2601

Dear Mr. Weickhardt and Ms Craik,

**Productivity Commission Issues Paper on Electricity Network Regulation**

The AEMC welcomes the opportunity to respond to the Productivity Commission's Issues Paper on Electricity Network Regulation.

The current AEMC work program includes 11 reviews and rule changes that consider issues related to benchmarking or the possible obstacles to investment in interconnectors. We describe below aspects of these reviews and rule changes that apply to the respective sections of the Productivity Commission's issues paper. A summary of the content of each of the relevant reviews and rule changes are set out in Attachment 1.

## Chapter 3 – What is benchmarking?

### Partial indicators

*Review into the Use of Total Factor Productivity for the Determination of Prices and Revenues (completed):*

There are two possible applications of TFP in revenue regulation permitted under the national energy laws. TFP indices can be used to assist the Australian Energy Regulator (AER) in applying efficiency benchmarking to service providers' costs under the existing building blocks approach. Alternatively, a TFP methodology could be applied in a more mechanistic manner where TFP indices are used to set the allowed rate of change of allowed revenues over the regulatory period. This methodology would be applied as an alternative to the existing building block approach established in the Rules. This Review was initiated following a Rule change request from the Victorian Minister for Energy and Resources, which was based upon concerns about the efficiency of current prices and the performance of service providers under the building blocks approach.

In the final report we proposed a two stage process for the changing the NER. Firstly an initial Rule would be made which requires service providers to provide specified regulatory data. This data could be used in the existing building blocks approach and additionally would permit the AER to test for the conditions necessary for a TFP methodology and to undertake initial paper trials of the calculations. Drafting of the detailed design of the TFP methodology and making of relevant Rules – the second stage – should only occur once both a) the necessary conditions can be, or are likely to be, met and b) it is considered that introducing a TFP methodology would contribute to the national energy objectives given the status of the market at that time.

The regulatory data provided under the initial Rule would assist the AER in meeting its obligation to have regard to efficient benchmarks when making regulatory determinations and also in applying the service standards incentive schemes. In addition, the development of TFP indices for the energy sectors could be used to guide wider policy decisions by providing an accurate measure of productivity in the industry.

As part of the review, the AEMC published a discussion paper which included a consideration of different approaches to measuring the productivity of network (and gas pipeline) businesses.

**Using benchmarking to assess regulatory performance**

*Review of Distribution Reliability Outcomes and Standards:*

Currently, the framework and settings for distribution reliability are determined by each jurisdiction. The national workstream of this review will provide advice on whether there is merit in developing a nationally consistent approach to expressing, delivering and reporting on distribution reliability outcomes. As part of this workstream, the AEMC will consider the different approaches to distribution reliability which are in place across the NEM. The SCER terms of reference indicate that after consideration of our report, the MCE may request the AEMC to develop a best practice framework that delivers nationally consistent distribution reliability outcomes. This best practice framework could then be voluntarily adopted by the jurisdictions or used as a reference to amend aspects of the existing approaches in place.

As each jurisdiction will retain control over the framework and settings for distribution reliability, there will be no harmonisation of existing jurisdictional obligations.

The AEMC commenced work on the national workstream of this review in February 2012, with the publication of a paper by The Brattle Group on Australian and international approaches to distribution reliability. The jurisdictions which were reviewed in this paper include each of the states and territories in Australia, as well as the United Kingdom, New Zealand, Italy, the Netherlands, and California and New York State in the US.

In reviewing each of these jurisdictions, The Brattle Group considered the characteristics of the relevant electricity networks, the approach to distribution reliability, recent reliability performance, governance arrangements, potential links between the approach to reliability and recent network investment, and customer service standards. Based on this analysis, Brattle also developed some best practice recommendations for distribution reliability in Australia.

Brattle's paper suggested that comparisons between jurisdictions can be difficult, as factors such as the level of customer density, the size of the network and the terrain it covers, and environmental factors (e.g. exposure to extreme weather) can have a significant impact on the reliability performance which is achieved and the costs of augmenting and maintaining each network. In addition, the costs associated with distribution networks are generally affected by a number of other factors besides the need to meet reliability obligations and requirements. Separating out the impacts of these other factors on revenues can be difficult. For these reasons, Brattle found there was no clear relationship between the annual revenues of the distribution networks they reviewed and the reliability performance which was achieved.

The AEMC will be publishing an issues paper in June 2012, which will set out the proposed scope and approach to the national workstream of the review for consultation. It is anticipated that the AEMC will provide its draft advice to the Ministerial Council on Energy on whether there is merit in developing a nationally consistent approach to distribution reliability outcomes in late 2012.

## Chapter 4 – But is benchmarking practical?

### Is imperfect benchmarking still useful?

*Economic Regulation of Network Service Providers Rule change:*

The AEMC is currently in consultation on a consolidated Rule change request proposed by the AER and the Energy Users' Rule Change Committee. The proposals from the AER relate to various aspects of the economic regulation of electricity transmission and distribution services under the NER; and the framework for the determination of the rate of return for gas services under the NGR. The proposal from the Energy Users' Rule Change Committee relates to the calculation of return on debt as part of the overall cost of capital under Chapters 6 and 6A of the National Electricity Rules (NER), which is also one of the issues dealt with in the AER's electricity rule change request.

Given that the proposals related to similar subject matter, the AEMC used its powers under 93(1)(a) of the NEL to consolidate the Rule change requests.

A consultation paper was issued on 20 October 2011 and a directions paper was published on 2 March 2012. Consultation on the directions paper closes on 16 April 2012.

The use of benchmarking is being considered by the AEMC as part of this Rule change. In particular, the AEMC has sought submissions on the circumstances of the NSP that it would be appropriate for the AER to take into account when it undertakes benchmarking. The AEMC's initial view is that some circumstances of NSPs must be taken into account (such as urban/rural differences) but that there are others which it would not be appropriate to take into account. The AER's consultants, Professors Yarrow and Littlechild, have also commented on benchmarking in the papers they provided (which are available on the AEMC's website).

### The importance of testing rival explanations

*Transmission frameworks Review:*

This review was initiated by the Ministerial Council on Energy (MCE) to ensure that the transmission frameworks that govern transmission and generation decisions are the most workably efficient going forward, recognising that a specific transmission investment may be a substitute for generation, or vice versa. The review seeks to ensure that the transmission arrangements are workably efficient, and promote the minimisation of total system costs.

*Possible Future Retail Electricity Price Movements: 1 July 2011 to 30 June 2014 (completed):*

This review was initiated by the MCE following a request from the Council of Australian Governments (CoAG). The review provides analysis of projected residential electricity prices. The analysis includes a price on carbon, as specified in the Clean Energy Future legislative package. The drivers behind the increases vary across jurisdictions. While increasing network investment expenditure, higher wholesale electricity prices, and government schemes are common factors, the relative proportions of these drivers differ across jurisdictions.

*Power of Choice – Stage 3 DSP Review:*

The Power of Choice review directions paper, published on 23 March 2012, contains commentary on the drivers of demand in the NEM, including analysis of the reasons for increases in peak demand in recent years. This analysis is based on a report the AEMC commissioned Ernst and Young to carry out, which was published on our website in December 2011.

*Distribution Network Planning and Expansion Framework Rule change:*

In undertaking their network planning and expansion activities, distribution businesses face various obligations at both a national and state level. These obligations are in place to help mitigate the risk of inefficient investment occurring as a consequence of the monopoly characteristics of network infrastructure.

Currently, Chapter 5 of the National Electricity Rules sets out a number of high level national requirements in respect of electricity distribution network planning. These requirements are general in nature and are supplemented by a range of state-based regulatory arrangements which differ significantly across jurisdictions.

As a result, there is a view that the lack of consistency and transparency associated with the current arrangements impedes efficient investment by distribution businesses and market participants. There is also a view that the current arrangements create a bias against the consideration of non-network alternatives in distribution network planning.

The rule change request seeks to implement a transparent national framework for electricity distribution network planning and expansion. Specifically, it is intended to give effect to the recommendations put forward by the AEMC in its final report for the Review of National Framework for Electricity Distribution Network Planning and Expansion, published in September 2009.

*Optimisation of Regulatory Asset Base and Use of Fully Depreciated Assets Rule change:*

The AEMC is currently consulting on a rule change request from the Major Energy Users (MEU) relating to the optimisation of the Regulatory Asset Base (RAB) and the continued utilisation of fully or partially depreciated assets that are still in operation and useful. The MEU is concerned that there is an incentive for network businesses to over invest because the NER and NGR require the RAB (or capital base) to be rolled forward from one regulatory control period to the next, without being subject to optimisation at regulatory resets. The proponent is also concerned that there is no disincentive for network businesses to replace fully or partially depreciated assets, irrespective of whether they are still in operation and useful. The proponent is concerned that these issues lead to inefficiency and higher prices for consumers.

The rule change request seeks to make two changes. First, it would introduce optimisation of the RAB (or capital base) at each regulatory reset to remove underutilised assets. Second, it would prevent the AER from approving the replacement of an asset where the existing asset is still functional, even if it had reached the end of its economic life. If approved these changes may affect the incentives to invest.

## Chapter 5 – The interaction of benchmarking with the regulatory framework

### The process for approving future investment and operating expenses

*Review into the Use of Total Factor Productivity for the Determination of Prices and Revenues (completed):*

The use of TFP indices in setting efficient cost benchmarks for the building blocks approach is already allowed for under the Rules. However to date, the AER has made limited use of benchmarking in its determinations. A key reason behind this is the lack of consistent data needed

to apply benchmarking techniques. Therefore our recommendation on establishing a better, more consistent data-set will facilitate greater use of benchmarking in future determinations.

*Economic Regulation of Network Service Providers Rule change:*

The AER in its rule change request has raised concerns with the way the current process for approving future investment and operating expenses is working. In particular, it claims that constraints on its power to assess and adjust expenditure forecasts may mean that the objective of efficient expenditure may not be achieved. This includes constraints on the way in which it is able to utilise benchmarking.

The AEMC has taken the initial view that there is no evidence that the AER has been constrained in its assessment of expenditure forecasts, however the AEMC has also sought further submissions on this point. The AEMC will also undertake further analysis to determine whether the policy intent in respect of expenditure forecasts established by the AEMC as part of the Chapter 6A rule determination is still an expression of good regulatory practice. This policy intent included the intent that the AEMC should be able to employ a range of analytical techniques, in addition to "bottom up analysis" to assess expenditure forecasts. These techniques would be likely to include benchmarking. If the policy intent is found to be appropriate, the AEMC will review the NER to ensure that they give effect to that intent.

**A potentially excess cost of capital for regulated cost recovery**

*Economic Regulation of Network Service Providers Rule change:*

First, the AEMC is considering the overall framework by which the cost of capital (rate of return) is set under the NER and the NGR. Three approaches are currently being used in respect of electricity distribution, electricity transmission and gas service providers. Importantly, the AEMC is considering the framework only and not what particular cost of capital parameter values should be. A number of features of each of the frameworks are being considered. These include:

- the ability of the regulator to adjust parameters to take into account changing financial market circumstances that may have a material impact on the ability of regulated businesses to raise debt;
- the application of industry-wide periodic reviews of WACC parameters and the circumstances under which departure from the WACC review outcomes would be justified at the time of the regulatory determinations;
- the appropriateness of cost of capital determinations being subject to merits review; and
- the appropriateness of a common framework applying across all three sectors.

Second, the AEMC is specifically considering the cost of debt element of cost of capital. Both the AER and the EURCC have contended that the current approach to determining the cost of debt allowance under the NER is problematic and results in estimates that do not reflect the debt financing costs incurred by NSPs. The AEMC has taken the view that the cost of debt warrants further consideration, but that the proposal in the EURCC's rule change request is too prescriptive and rigid.

**Reliability standards and planning**

*Review of Distribution Reliability Outcomes and Standards:*

The AEMC previously noted in its Review of National Framework for Electricity Distribution Network Planning and Expansion that there is a lack of consistency and transparency in how distribution reliability outcomes are determined. Distribution reliability outcomes are currently set separately for each of the National Electricity Market (NEM) jurisdictions by jurisdictional

regulators, relevant government bodies or DNSPs themselves, under different frameworks that are in place for each jurisdiction.

As part of the national workstream for this review, the AEMC will provide an analysis of the different approaches to achieving distribution reliability across the NEM. We will also assess the costs and benefits of the different approaches with respect to how different reliability outcomes balance the cost of delivering the reliability outcome with customers' willingness to pay. Based on this analysis, the AEMC will consider if there is merit in developing a nationally consistent framework for expressing and reporting on distribution reliability outcomes.

**Demand-side management**

*Power of Choice – Stage 3 DSP Review:*

The AEMC is currently conducting a review into possible changes to the NEM to help consumers better manage their energy consumption. This review is also considering the way in which demand side participation (DSP) can help to reduce peak demand. The AEMC published a directions paper in March 2012 which assesses the potential for greater DSP in the electricity market and identifies specific market conditions required for efficient DSP.

The directions paper includes a chapter summarising various forms of existing and potential DSP options. It also outlines the potential opportunities that those DSP options may deliver. This is based on a report we commissioned Futura Consulting to carry out which surveys all pilots and trials of DSP in Australia.

The key issues identified are as follows:

- The role of pricing - cost reflective pricing, provisions for vulnerable consumers, retail price regulation;
- Supply chain interactions - aligning of incentives across participants, valuing of DSP impacts;
- Consumer participation – access to DSP products , engagement, information, and technology (e.g. meters); and
- Networks – profit incentives, managing DSP uncertainty, facilitating distributed generation.

A draft report is due to be published in June 2012.

*Energy Market Arrangements for Electric and Natural Gas Vehicles:*

We are currently conducting a review in relation to identifying the energy market regulatory arrangements that would facilitate the economically efficient uptake of EVs and NGVs. This review covers the National Electricity Market, the electricity markets in Western Australia and natural gas markets. An issues paper was released on 18 January 2012 which canvassed the findings from AECOM (an economic consultancy) regarding scenarios of potential future EV uptake and our views on the energy market issues with respect to EVs that need to be addressed.

With respect to demand side participation, this review investigates how to encourage efficient behaviour among EV users with a view to managing impacts on peak demand. Relative to typical household consumption, the load of an electric vehicle is relatively large and flexible and therefore amenable to demand side participation. In practice, this means that the recharging of an electric vehicle (that is, its EV load) can be potentially undertaken at off-peak times and thus can manage an EV load's impact on peak demand. The role of pricing signals, electricity metering arrangements and issues in the retail market and distribution networks will be addressed.

Our work on EVs will be conducted in parallel with the Power of Choice review. We consider there are broader demand side participation issues being examined in our Power of Choice review which are pertinent to our work on EVs.

*Distribution network planning and expansion framework rule change:*

Several components of the rule change (e.g. the demand side engagement strategy and the regulatory investment test for distribution (RIT-D) process) are intended to help facilitate engagement between DNSPs and non-network providers during the planning process and facilitate the consideration by DNSPs of non-network solutions as alternatives to network investment.

**Chapter 6 – Interconnector issues**

*Transmission Frameworks Review:*

Through the Transmission Frameworks Review, the AEMC has come to the view that an interconnector is not simply 'a transmission line or group of transmission lines that connects the transmission network in adjacent regions' as it is defined in the Rules. The physical piece of transmission line which connects one region to another would not be able to carry out its function without being connected to the flow of power from the transmission lines in the regions that it is adjoining.

Due to the complex nature of the transmission system, the AEMC is of the view that it would be insufficient to consider what improvements could be made to the regulatory arrangements for interconnectors in isolation. The regulatory arrangements for all elements of the transmission system within the NEM should be considered in a holistic manner.

The capability of the NEM's interconnectors varies over the long term as system conditions change with load growth, new network augmentations and new generator connections. Interconnector capability can also increase (or decrease) when transmission lines are re-rated to a higher (or lower) thermal limit, or TNSPs change their operating practices.

The AEMC has considered the regulatory arrangements for transmission and has come to the view that they are delivering many of the outcomes that would be expected under a well-functioning transmission planning regime. It is not immediately obvious that the level of price separation between regions within the NEM would suggest that there is a clearly insufficient level of inter-regional transmission capacity between the regions. While the absence of significant and sustained price separation between regions is not necessarily determinative of sufficient inter-regional investment, we consider that it provides a useful indicator.

While it is not clear to the Commission that the current arrangements are failing to deliver an efficient level of inter-regional investment or that options for additional inter-regional investment are not being considered by TNSPs, this is not to say that there is no scope for enhancing transmission planning arrangements in the NEM. We recognise there may be scope for greater transparency as to how TNSPs are assessing investment options. Through the Transmission Frameworks Review, the AEMC is consulting with stakeholders on potential changes which could be made to improve the efficiency of the current regime.

The review's First Interim Report outlined a range of options for enhancing the current planning arrangements reflecting, in some cases, stakeholder proposals. The options proposed predominantly stem from inter-regional planning considerations, but recognise the large over-lap between inter- and intra-regional planning (and the difficulty in making such a distinction). The preliminary recommendations that we will make in the forthcoming Second Interim Report will therefore focus on ensuring that inter- and intra-regional planning is undertaken on a coordinated basis across the NEM.

To date, our work, and stakeholder views, on the review have not suggested that attempting to promote a greater level of unregulated investment in interconnectors would be an appropriate course of action. In order for such merchant interconnectors to be economic, large price differences would be required between regions, and these would need to be maintained even after the interconnector was operational (as the interconnector would be remunerated through the difference in regional prices).

Further, as already discussed, it is impossible to separate inter- and intra-regional planning, and an emerging conclusion of the review is that greater (rather than less) coordination and optimisation of these activities is desirable. Therefore, although interconnections between regions provided by regulated TNSPs might tend to "crowd out" merchant investment, relying on a solely merchant approach is unlikely to be practical or efficient.

It is also not clear to the Commission that consideration of radically different approaches, such as the Argentinian Public Contest method, is warranted. As the Productivity Commission notes, under these arrangements, any market participant that was a beneficiary (primarily generators and electricity distributors) had to propose, vote for and pay for all major network expansions. In the NEM, currently, generators are not seen as beneficiaries of network expansions. While the Commission considers that there is a case for considering changes to the arrangements for generators in the NEM, our current view is that the approach that might be of most benefit would be the provision of financial firm access rights.

The Commission has also been made aware of the experience of distributors planning elements of the transmission network in Victoria. The evidence suggests that these arrangements have proved problematic in practice.[1] The Commission is therefore taking the approach of developing and assessing enhancements based on the current paradigm of TNSP-led transmission planning, and these will form the basis of the preliminary recommendations we intend to present in the Second Interim Report.

*Inter-regional Transmission Charging Rule change:*

The MCE has proposed a Rule change to implement an inter-regional transmission charging scheme. This request has revealed a number of complex design issues, on which the Commission has recently consulted. However, once implemented, we consider that an inter-regional transmission charging scheme might mitigate some stakeholders' concerns regarding the efficacy of the current inter-regional transmission planning process.

## Chapter 7 – The role of generators

*Potential Generator Market Power in the NEM:*

The AEMC is currently in the process of working on a Rule change proposed by the Major Energy Users (MEU). The MEU considers that in periods of peak demand, some generators have the ability and incentive to exercise market power to increase the wholesale electricity spot price. To address the problem, the MEU proposes that:

- the Australian Energy Regulator should assess which generators in each NEM region have market power during periods of high demand and declare each of them to be a 'dominant generator'; and
- when regional demand exceeds the level at which a generator has been declared to be a 'dominant generator', the dominant generator would be required to offer all of its available capacity for dispatch at a price that does not exceed the administered price cap of $300/MWh.

[1] See, for instance: Citipower and Powercor, *Submission to Transmission Frameworks Review First Interim Report*, 27 January 2012.

The Commission has designed an assessment framework for this rule change based on prices being sustained above LRMC. The AEMC directions paper published in September 2011 and associated NERA report are of relevance for the Productivity Commission's review.

Please contact us should you wish to discuss the aforementioned projects and their relevance to the inquiry being carried out by the Productivity Commission.

Yours sincerely,

**Steven Graham**
Chief Executive Officer

**Attachment 1**

*Transmission Frameworks Review:*
This is a review of the arrangements for the provision and utilisation of electricity transmission services and the implications for the market frameworks governing transmission investment in the NEM. The review is considering the role of transmission in providing services to the competitive sectors of the NEM, through considering the following key areas together in a holistic manner:

- Transmission investment;
- Network operation;
- Network charging, access and connection; and
- Management of network congestion.

*Economic Regulation of Network Service Providers Rule changes:*
These rule change requests seek to change the way revenues are set for electricity and gas network businesses.

*Optimisation of Regulatory Asset Base and Use of Fully Depreciated Assets rule change:*
This rule change request proposes to introduce optimisation of the RAB (or capital base). It also seeks to disincentivise the replacement of assets which are still in operation and useful.

*Review of Distribution Reliability Outcomes and Standards:*
This is a review of distribution reliability outcomes and standards. The review has two separate workstreams, working to separate (but overlapping) timetables:

- a review of the distribution reliability outcomes in NSW, which will provide advice on the costs and benefits of alternative levels of distribution reliability in NSW; and
- a review of the frameworks across the National Electricity Market (NEM) for the delivery of distribution reliability outcomes, which will provide advice on whether there is merit in developing a nationally consistent framework for expressing, delivering, and reporting on distribution reliability outcomes.

*Distribution Network Planning and Expansion Framework Rule change:*
This rule change request seeks to implement a national framework for electricity distribution network planning and expansion. Specifically, it is intended to give effect to the recommendations put forward by the AEMC in its final report for the *Review of National Framework for Electricity Distribution Network Planning and Expansion,* published in September 2009.

*Inter-regional Transmission Charging Rule change:*
This Rule change request proposes to introduce an inter-regional transmission charging mechanism to Chapter 6A of the National Electricity Rules (Rules) in the form of a load export charge.

*Possible Future Retail Electricity Price Movements: 1 July 2011 to 30 June 2014 (completed)*
This report sets out the possible future trends in residential electricity price movements in Australia, and the drivers behind these trends. For each jurisdiction and at a national level, this report adopts indicative prices for a base year of 2010-11, and projects prices for the three financial years from 2011-12 to 2013-14.

*Power of Choice – Stage 3 DSP Review:*
The purpose of this review is to identify market and regulatory arrangements that would enable the participation of both supply and demand side options in achieving an economically efficient demand/supply balance in the electricity market.

*Energy Market Arrangements for Electric and Natural Gas Vehicles:*

The purpose of this review is to identify the energy market regulatory arrangements, which would facilitate the economically efficient uptake of electric vehicles (EVs) and natural gas vehicles (NGVs).

*Potential Generator Market Power in the NEM rule change:*
This rule change request seeks to constrain the potential exercise of market power by generators in the NEM.

*Review of the Use of Total Factor Productivity for the Determination of Prices and Revenues (completed):*
On 7 July 2011 the AEMC published the final report on its review into the use of total factor productivity (TFP) for the determination of prices and revenues. In this review, the AEMC found that using a TFP-based methodology could contribute to improvements in electricity and gas network regulation to achieve more efficient outcomes for consumers. Before the implementation could be considered, more consistent and robust data on network business' inputs and outputs needs to be collected and reported to the regulator. This data will improve the application of the current regulatory framework and aid benchmarking. The SCER is considering the AEMC's recommendations.