16 August 2012

Mr Philip Weickhardt
Presiding Commissioner
Electricity Network Regulation Inquiry
Productivity Commission
Level 2, 15 Moore Street
Canberra ACT 2600

via email: electricity@pc.gov.au

Dear Mr Weickhardt

Supplementary Submission - Productivity Commission Inquiry - Electricity Network Regulation

The Energy Networks Association (ENA) wishes to make a further supplementary submission to the Productivity Commission (Commission) Inquiry into Electricity Network Regulation (Inquiry).

Executive Summary

The ENA, as the primary representative of energy network businesses in Australia, is making this supplementary submission in response to a submission by the Australian Energy Market Operator (AEMO) dated 11 May 2012 to the Commission Inquiry. The purpose of this submission is to provide a different perspective and to correct the inaccuracies put forward in the AEMO submission. The focus of this submission is predominately on distribution issues as we understand Grid Australia, whose members are also members of ENA, will be making a detailed submission on transmission matters.

The AEMO submission does not demonstrate a proper reflection of the current framework, and in particular the framework for economic regulation. Combined with a highly selective use of benchmarking data, we are concerned that the submission may lead to inaccurate conclusions.

The key points made in this submission are that:

- Contrary to AEMO's assertion, the current framework for economic regulation does not closely resemble rate-of-return regulation. As such, it is also incorrect to state that the gold plating incentive that exists for rate-return-regulation exists for network businesses in the NEM.
    - Instead, the current framework is better characterised as an application of incentive regulation. Under the approach applied in the NEM, prices are decoupled from costs over the regulatory period. This in turn provides incentives for businesses to reduce cost where possible, and so to 'out-perform' their regulatory allowance or minimise any overspending against the allowance.[1]

[1] We note that while most DNSP's are regulated under a price cap Queensland and Tasmania still have a revenue cap.

- ENA supports incentives for improved service provision, and notes that such incentives are a key feature of the existing framework. However, it is also essential for the framework to provide a reasonable expectation that efficiently incurred costs will be recovered so that incentives for efficient investment are preserved over the longer term. This second requirement – which AEMO ignores in its analysis – places a limit on the extent that business revenues can be tied to reliability and capability outcomes. Maintaining a reasonable expectation that efficient costs will be recovered is fundamental not only for the long-term sustainability of regulated network businesses, but for all businesses that operate in the economy.

- It is incorrect for AEMO to identify the recent trends in asset investment as a source of evidence that service incentives are not working, and in doing so AEMO appears to misunderstand the operation of service incentive schemes. Service incentive schemes reward businesses for initiatives that provide benefits to customers, and thus are intended to encourage (rather than discourage) expenditure to generate this benefit. Service incentive schemes operate as a counter-balance to the incentives to minimise expenditure discussed above – that is, businesses have a general incentive to minimise cost but also an incentive to deliver customer benefit, which translates into an incentive to deliver an efficient service level at minimum cost. As such, asset investment, for instance replacing aging assets, is a sign that service incentives are working.

- On service, or planning, standards, the ENA supports an economic approach to standard setting. It is equally important, however, that the standards and objectives for network planning are articulated clearly upfront to facilitate transparent and predictable planning processes.

1. Introduction

The ENA is the principal body representing energy network businesses. Its 23 members supply electricity to more than 8 million customers and gas to 3 million customers. The ENA welcomes the opportunity to provide a supplementary submission to the Commission's Inquiry.

The purpose of this submission is to respond to a number of matters raised in a submission by AEMO to this Inquiry. While it is not clear whether many of the matters raised in the AEMO submission are in scope for the Commission's review, ENA members nevertheless consider it is important that the claims it has made are subject to scrutiny.

The AEMO submission focused predominately on transmission issues; however, it also makes a number of assertions that are relevant to distribution networks. We are aware that Grid Australia, whose members are also members of ENA, is also preparing a submission in response to AEMO's submission which will address the transmission issues in detail. The purpose of this submission is to focus on those matters that are most relevant to electricity distribution networks, principally:

- The incentives provided by the current approach to economic regulation, and

- Service performance output measures and incentives.

As an overarching matter, the ENA is highly concerned about the analysis provided by AEMO to support its proposed changes to the regulatory framework in the National Electricity Market (NEM). The simplistic analysis presented by AEMO puts a spotlight on the considerable risks of placing inappropriate emphasis on benchmarking data for decision making. While some benchmarking analysis may appear credible on the surface, there are many reasons why it may not provide an accurate representation of the current circumstances. ENA understands that the Grid Australia submission will focus on the detail of the analysis put forward by AEMO in its submission. Therefore, this submission focuses only on the policy assertions made by AEMO.

ENA reiterates, however, that despite the limitation of benchmarking, as indicated in our previous submission, it considers that there is an important role for benchmarking in the regulatory framework. This is as a source of information to identify where further scrutiny is warranted. However, there are too many factors that influence output data in the electricity industry for it to be the primary source of information for decision makers.

2. Framework for incentive regulation

AEMO's submission makes the following assertions with respect to the current framework for economic regulation in the NEM:

- The building blocks framework resembles rate-of-return regulation and as such leads to gold plating.
- Revenue regulation rewards network businesses for building assets rather than for providing services, and
- Network businesses have poor incentives to respond appropriately to changes in demand.

These statements are not a proper representation of how incentive regulation works. While it is acknowledged that AEMO is primarily the market operator and not an economic regulator, we believe the statements made lack understanding, particularly as they are not backed with any demonstrable policy analysis. Contrary to the statements made by AEMO:

- The current framework is not the same as rate-of-return regulation and does not provide an incentive for network business to undertake 'gold plating'
- Network businesses are already rewarded for providing services, importantly however, this is not done at the expense of cost recovery and incentives for efficient investment over the long-term, and
- Network businesses do respond efficiently to changes in demand and adjust their investment programs accordingly.

Differences between rate of return and price cap regulation

AEMO makes the following statement with respect to the approach to economic regulation applied in the NEM:[2]

> *"One of the main criticisms of the building block approach is that it closely resembles rate-of-return regulation. While there are incentives designed to improve operational behaviour, the power of the incentive is low compared with the incentive of the business to over-invest in its asset base or drive down the unit cost of investment. This is known as gold plating or the Averch-Johnson effect."*

It is incorrect to assert, as AEMO does, that employing building blocks to calculate revenue allowances means those regimes automatically amount to "rate-of-return regulation". The building blocks approach is simply an approach whereby relevant annual costs are expressed and summed to calculate an estimated total annual cost of service provision. However, the fact that a regulatory regime uses the building block approach says little about the incentive properties of the regime – the building block approach can be used in a regime that provides weak incentives for network

[2] AEMO, *Submission to the Productivity Commission Inquiry,* p. 21.

businesses (classical "rate of return regulation"), but equally could be used in a regime that provides very strong incentives for performance improvement.

The approach that is applied in the NEM is recognised as incentive or price cap regulation. This is because, while the building block approach is used to forecast the annual cost of service over the regulatory period, prices are then decoupled from costs, thus providing financial rewards (incentives) for cost minimisation.[3] In addition, other performance incentives are created, such financial rewards or penalties tied to service performance. Academic studies generally note that pure rate-of-return regulation and pure price cap regulation sit at opposite ends of the spectrum,[4] whereas in practice the optimal regulatory mechanism will lie somewhere between these two. This is to ensure that incentives for cost minimisation are provided, but businesses and customers are provided with some "insurance" against changes in cost (so that the benefits or dis-benefits associated with a change in cost are shared rather that accruing to any one party).

In the quote above AEMO cites Paul Joskow, a renowned academic in the field of regulatory economics, to support its claims about the similarity between the building blocks approach and rate-of-return regulation. The ENA notes that Professor Joskow also considers that rate-of-return regulation and price cap regulation are at two ends of a spectrum. Professor Joskow also comments, however, on whether modern regulatory practice exhibits the cited 'Averch-Johnson effect' and gold plating. On this matter Professor Joskow states that there is little, if any, empirical evidence to support the theory especially in light of the significant advances that have been made in incentive regulation since this theory was popular.[5]

> *The A-J-W[6] effect turns on the incentives created by a characterization of rate of return regulation that effectively reduces the regulated firm's effective cost of capital inputs (r) by creating a profit margin on increases in capital input while leaving fixed the price of other inputs ("labor" in the A-J model) since these input costs are assumed (that is, asymmetrically vis-à-vis capital costs) to be passed through dollar for dollar into regulated prices. This in turn leads a profit maximizing regulated firm subject to this type of regulation to make long run production decisions that use a higher capital/labor ratio than would be cost-minimizing given the firm's production function and true input costs. This theory ignores many attributes of real regulatory institutions and it has little if any empirical support (Joskow, 1974, 2007; Joskow and Rose, 1989), but for many years it was "the" positive theory of regulation. However, in the last fifteen or twenty years there have been significant advances in the theory of "incentive regulation" or "performance-based regulation" and these concepts are beginning to be applied in the regulation of electricity and gas transmission and distribution networks in a number of countries (Joskow 2006a, 2006b, 2007).*

The theory of incentive regulation that is referred to by Professor Joskow is that by decoupling prices and costs for a period of time, regulated businesses will have an incentive to 'out-perform' the revenue allowance. In the NEM, this occurs by setting a revenue allowance for a period of five years. On this basis, ENA considers it is incorrect for AEMO to draw the parallel it does between

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[3] As indicated in our previous submission, the building blocks revenue allowance is determined for a five-year regulatory period based on cost forecasts. Except for some unique circumstances, this is not revisited over the five-year period. As a consequence, the level of compensation a business receives over those five years does not change in line with actual expenditure. This, in turn, creates an incentive for the business to 'out-perform' against the forecast revenue allowance.

[4] This spectrum reflects the incentive power of the regime, which spans in theory from a regime whereby the network business is compensated perfectly for any marginal change in cost (zero incentive power), to one whereby the network owner bears 100 per cent of any marginal change in cost (100 per cent incentive power). It is noted that rate of return regulation as implemented in practice did expose businesses to some of the change in costs, and so did not correspond to the "bookend" described above.

[5] Joskow, P.L., *Incentive Regulation and Its Application to Electricity Networks,* Review of Network Economics, Vol. 7, Issue 4 – December 2008, p. 549.

[6] Joskow refers to the Averch-Johnson effect as the A-J-W effect, this is in recognition of the work of Stanislaw *Wellisz on the theory.*

the framework for economic regulation in the NEM and rate-of-return regulation. As such, it is also incorrect to state that the gold plating incentive that exists for rate-of-return regulation applies in this instance.

Reward for services provided

AEMO states that network businesses should be rewarded for the services provided rather than for the assets constructed. AEMO considers that businesses should be rewarded for maintaining capability and meeting a defined reliability level rather than a return on assets used to provide these services.

First and foremost, the NEM regulatory regime already contains rewards or penalties for network businesses that reflect measures of service performance. One interpretation of AEMO's submission is that it is advocating refinement or extension to the range of performance measures that are included in the current schemes. ENA supports strengthened performance incentives where this is consistent with the NEO, as discussed further below.

However, AEMO's discussion of service incentives more generally downplays seriously the importance of the regulatory regime also providing investors with a reasonable expectation that efficient costs will be recovered. An expectation that efficient costs will be recovered is essential for any business – both in regulated and non-regulated sectors – to have the incentive and capacity to continue to undertake the investments required to deliver the services sought by customers. In the context of an essential service such as electricity, this is clearly not an outcome that would be in the long-term interest of consumers. This primacy of ensuring efficient cost recovery is reflected in this being a requirement of the National Electricity Law for economic regulation in the NEM.[7]

In addition, there is a limit to the extent to which it is desirable for network businesses to be exposed to changes in the "outputs" that are delivered by their networks. It is a characteristic of network services that capital costs are typically irreversible, while both the quantity (e.g., energy sales) and quality (e.g., reliability) of network services and the performance of network assets are affected materially by factors that are outside of the control of network businesses (such as fluctuations in economic activity, weather-related events and environmental factors, respectively). Thus, if a network business's revenues were to be tied mechanically to the "outputs" that are delivered, substantial volatility may be introduced into revenue and profitability, which may put at risk the recovery of efficient costs and threaten the capacity for network business to raise debt finance. Moreover, where the risk is caused by factors that are exogenous to the network business, then transferring this risk to network businesses would generate little improvement in economic efficiency.

Rather, when developing effective and sustainable incentive regulation, a careful assessment is required of both the benefits that may be created (the potential to motivate improved performance) and the costs (the potential to create risk that may adversely affect investment). Such a consideration of benefit and cost should be applied to measures of performance that are incorporated into the incentive regime, and to the other aspects of the incentive regime, such as the power of incentives created and whether certain events may be excluded from the scheme.

The ENA, however, does support strengthened service performance incentives where a case can be made that these would deliver benefits to customers. For distribution networks in particular, it is acknowledged that for a number of jurisdictions service incentives schemes are in their infancy. As such, ENA supports the continued development of these schemes so that they properly align service incentives relative to a customers' willingness-to-pay for improved service performance and

[7] Section 7A, clause 2 of the National Electricity Law.

are balanced with other incentives in the regulatory framework. The role of service incentives in the current framework is discussed further in section 3 below.

Response to changes in demand conditions

AEMO's statement that businesses have poor incentives to respond to changes to demand conditions is also at odds with how incentives actually work in the current regulatory framework. If forecast demand falls compared to what was originally expected this might allow a network business to delay a project. Delaying projects delivers a financial benefit to network businesses. This is because under price cap regulation they benefit to the extent of the annual financing cost for the project that was allowed within the cap for the period the project is delayed. Curiously, we note that AEMO acknowledges this incentive when it expresses concern that the current revenue cap framework might provide too strong an incentive to delay projects beyond the optimal delivery time.[8]

The evidence also does not support AEMO's contention that network businesses do not respond to changes in demand conditions. Indeed, the recent Somerville Report, which is also cited by AEMO, indicates that Queensland distributors have identified capital expenditure savings compared to their revenue allowances in the order of $550 million for Energex and $620 million for Ergon Energy that are driven predominately from slowing demand growth.[9]

3. Service standards and incentives

The AEMO submission addresses two matters relevant to distribution service performance, namely service standards and service incentives. While the objective of each is to ensure that customers are provided with an appropriate level of service, there are important differences between them. It is apparent that these differences have not been fully comprehended by AEMO.

In each case a service standard or incentive is in place to counterbalance the financial incentives for cost reduction identified above. That is, absent arrangements for service performance, network businesses would have an incentive to increase profit by avoiding service based expenditure. Therefore, incentive mechanisms and administrative tools are both applied to encourage, or require, a level of service performance desired by customers. The difference between the measures is that service standards comprise an obligation to meet either a prescribed quantity and quality of output (for example, a target for aggregate customer minutes off supply) or inputs (for example, to plan for a prescribed level of redundancy), whereas service incentives seek to provide financial rewards when businesses increase service performance and penalties when service declines, encouraging businesses to strive for the socially desirable standard of performance.

Service incentives

In its submission AEMO contends that even though output targets for service performance are set as an incentive in the revenue-setting framework, under the current framework, these incentives are outweighed by the incentive to construct assets. These statements, however, are at odds with how service incentives actually work.

A service incentive scheme works to encourage a network business to spend *more* rather than less. That is, it rewards a network business where it undertakes expenditure that improves service performance and applies a penalty when it avoids expenditure and service performance suffers. Expenditure in this regard might include the construction of newer assets that have a lower risk of

[8] AEMO submission, p. 20. As explained further in the following section, service standards and incentives operate to ensure that network businesses do not have an incentive to postpone investment beyond the optimal delivery time.
[9] ENCAP Review Panel, *Electricity Network Capital Program Review 2011, Detailed report of the independent panel,* p.73

failure compared to older assets.[10] As such, it is incorrect to state that the service incentives schemes are not working because there is an incentive to construct assets. Indeed, where network businesses upgrade assets to provide a net benefit to customers this should be cited as evidence of the incentives working.

Service standards

AEMO cites a number of recent reviews of distribution planning arrangements to support its contention that a purely probabilistic approach planning is preferable to alternatives, including deterministic standards.

ENA supports the use of economic assessments to set planning standards for distribution businesses. It is equally important, however, that standards be set such that transparency and accountability are maintained. Further to this, ENA agrees with the Brattle Group recommendations; as expressed by AEMO. These are that planning targets should:

- Be realistic and achievable
- Provide longer-term certainty
- Allow for a trade-off between cost and reliability when setting standards
- Be set in a transparent and predictable manner
- Recognise that understanding reliability targets in the short and long-term allows distributors to fully incorporate reliability thresholds into their planning.
- Incorporate customer willingness-to-pay assessment when setting standards and targets.

On this basis, ENA considers that there should be a balance between different approaches to network planning, noting that there is considerable value in defining upfront the planning objectives.

Thank you for your consideration.

Yours sincerely

Malcolm Roberts
Chief Executive

[10] It should be noted that operating expenditure may also increase in order to improve service performance outcomes. This may be in the form of increased maintenance spending or a larger labour force in order to respond more rapidly when service outages occur. There is, however, a limit to the extent that operating expenditure can be used to improve service performance and at some point capital expenditure will be inevitable.