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26 November 2012

Electricity Network Regulation
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**Productivity Commission Draft Report – Electricity network Regulatory Frameworks**

The Energy Supply Association of Australia (esaa) welcomes the opportunity to make a submission to the Productivity Commission's review of Electricity Network Regulatory Framework – Draft Report. The esaa commends the Commission for a substantive and thorough analysis of the set of issues intertwined with the regulation of electricity networks.

The esaa is the peak industry body for the stationary energy sector in Australia and represents the policy positions of the Chief Executives of 36 electricity and downstream natural gas businesses. These businesses own and operate some $120 billion in assets, employ more than 51,000 people and contribute $16.5 billion directly to the nation's Gross Domestic Product.

Recently there has been a significant focus on network regulation, as increasing network costs have been the key driver of higher retail electricity prices. Understanding the causes of the increases is the first step in developing effective solutions. Rising network costs can largely be attributed to peak demand, replacing aging infrastructure and reliability standards. While replacing aging infrastructure is cyclical and unavoidable, the impact of the other two drivers can be ameliorated through policy responses.

Rising peak demand has been a key driver of the falling utilisation of the electricity network. As households have increased their use of energy intensive items like air-conditioners, this has caused the growth in peak demand to outstrip aggregate demand. This problem has been accentuated by the lack of price signals informing consumers of the true cost of their consumption. The Commission has noted that there is likely to be an upward trend in peak demand based on Bureau of Meteorology predictions of increasing frequency of very hot days. This is why the esaa support changes to time of use pricing (ToU) and associated metering infrastructure as the most important reform for the electricity sector.

Despite the wide spread claims of 'gold plating' little evidence has been provided to back this claim. The suggestion that because networks earn a return on their asset base they will build incessantly is usually made without any serious analysis to substantiate it. Such assertions overlook the fact that asset bases must be approved

by the regulator, the returns on investment are dependent on a series of regulatory decisions taken over 40 to 50 years and that Network Service Providers (NSPs) do not have access to an endless supply of financing.

It is argued that the National Electricity Rules (the rules) are the cause of higher prices. If the rules were the underlying problem, you would expect to see issues across the board. As network charges in Victoria are similar in real terms to 20 years ago, incentive-based regulation appears to be effective. This suggests that the causes of rising prices lie elsewhere. The esaa would urge caution in assumptions that changing the rules will be a panacea, as the cost of under-estimating network costs are far greater than the cost of over-estimating.

The esaa believes there is a significant amount of work that needs to be undertaken before benchmarking can play a meaningful role in revenue determinations. While in the longer-term benchmarking may play a more substantial role, its inherent limitations mean it may only be useful as one of a number of diagnostic tools to assess revenue proposals.

Our views are set out in more detail in Attachment A.

Yours sincerely

**Matthew Warren**
Chief Executive Officer

# Attachment A

## Price signals

*Time of use pricing*

Currently consumers do not face cost reflective prices, as network costs are averaged over total consumption. This has led to over-consumption at peak times. The esaa agrees with the Productivity Commission's conclusion that network savings can only be realised if a sufficient number of customers in a given geographic area are exposed to ToU pricing, as peak demand from the network perspective is essentially a local matter.

While ToU pricing and the use of advanced metering infrastructure (AMI) are generally accepted as the best approach to dealing with peak demand, the question remains as how and who should lead the roll-out. The Commission believes that a Distribution Network Service Provider (DNSP) led roll-out will be able to better maximise the potential returns, as it aligns the roll-out with network constraints, provides economies of scale and would avoid peaky customers opting-out. By contrast, the AEMC has recommended a retailer-led process for installation of AMI with most households being exposed to ToU on a voluntary basis.

Given the experience in Victoria where the government mandated the rollout but did not communicate the changes effectively to consumers, a consumer-led approach may be appealing.

Given the complexities of this area, it is suggested that the approach is not prescriptive. This still allows for area-wide rollouts of AMI where a robust business case can be made by the DNSP, but also for voluntary take-up to increase penetration of the necessary metering infrastructure more gradually where a mass rollout does not take place. Minimum specifications for new or replacement meters may be another way to increase penetration over time.

The form of ToU pricing should also not be prescribed. The Commission favours critical peak pricing where high prices are charged on a small number of days in a year, subject to a maximum and with adequate notification to allow consumers to choose how to respond. This form of pricing may drive consumers to adopt flexible responses. This could be activity-based for households, e.g. choosing to reduce consumption by conducting activities outside of the home. Or it could drive take-up of other demand management technology such as kill switches that turn-off non-essential items or appliance direct load control. The latter will be cheaper for networks to offer if there's also a price benefit to users. Businesses will orient themselves for factory closures or consider the value of embedded generation.

However, a typical three part ToU pricing with standard peak, off-peak and shoulder tariffs may better drive habitual changes: e.g. move battery charging to off peak, put dishwasher on overnight, or embedded changes: e.g. move hot water to dedicated off peak or gas. In the longer term it can create a market for appliances that may not

yet be widely available, e.g. air conditioning powered by other energy sources like gas, or off-peak water chilling (or use of phase change materials) to provide cooling during peak times. It is not a case of either/or: these pricing types can be complementary with each other and with other peak demand initiatives such as direct load control.

The esaa supports the Commission's view that the system will only work if retailers face time dependent network prices and that retail price regulation is removed. If the former is not implemented, retailers will have little incentive to introduce ToU prices, however, if retailers are not able to pass on ToU network costs they will be face a risk that they will not be able to effectively manage. The esaa is comfortable with all DNSPs moving to price caps as part of the complementary reforms.

The esaa agrees that the pricing structures should be developed by industry, given real world complexities of the sector. To avoid unnecessary complexity with the new pricing structures and to ensure that all households face the appropriate incentives around consumption, ToU prices should apply to all households regardless of background. Equity concerns for disadvantaged groups should be financed transparently in the most efficient way (general taxes), similarly to the carbon price assistance.

Before ToU pricing is rolled-out the question about the appropriate approach to storage and dissemination of the information collected by smart meters will need to be resolved.

*Demand response mechanism*

The introduction of a demand response mechanism (DRM) that pays end users via the wholesale electricity market for reducing their demand raises serious concerns for the industry. Various groups, including the Australian Energy Market Commission (AEMC), have proposed a model that would pay consumers the prevailing spot price if they reduce their consumption below a baseline level.

The esaa has commissioned research on the proposed DRM to investigate its economic impacts. The report finds that there are potentially significant economic costs associated with the DRM and that the supposed benefits of the mechanism are questionable. This report was submitted to the AEMC.

The industry considers that there are several issues related to this proposal which have not been adequately addressed. Firstly, it is unclear why this specific mechanism is needed. Large consumers can already enter into agreements with their energy retailer to take on greater exposure to the spot price. By reducing consumption at times of high prices consumers would benefit through lower energy costs.

The proposed DRM offers low risks for the consumer but increases the risk for both energy generators and retailers. This is due to the role of hedging in the energy market. SFS Economics' report for the esaa explains that "the DRM introduces a disconnect between the demand that must be hedged by retailers in the contract market (as reflected in the baselines of DR customers), and actual (metered)

demand and therefore actual generation in the spot market. In the short run, generators contracted to meet baseline demand will therefore be exposed to greater financial risks from unfunded difference payments." As financial markets respond quickly to changes in risk, prices of hedge contracts will rise to adjust to this and this will consequently be passed on to all consumers. Essentially, this proposal places the risks on energy retailers and generators while allocating the rewards to individual consumers.

Additionally, the purported industry savings from the proposed DRM are poorly targeted. It is suggested that such a measure would provide network savings through reduced, delayed or deferred infrastructure upgrades. However, as there is no link in the proposed mechanism to electricity networks it is not clear how this would occur. In addition, high price events in the wholesale market do not necessarily correlate with peak periods in network areas, a point made by the Commission.

Finally, the proposition of establishing baselines is complex and could be subject to gaming. In some instances, a business with a back-up generator could elect to use this in order to generate electricity rather than purchase it from the grid. This would then appear as if the business' consumption had fallen below the baseline, while in fact, consumption remained the same. This has been the source of much of the demand response in some similar demand response schemes in the US.

*Distributed Generation*

The esaa supports exploring a new payment model for distributed generation (DG). Where possible a provider of DG should receive the actual wholesale market price for the energy exported into the grid. We agree with the Commission that the next best solution is to approximate tariffs for peak and non-peak production. With respect to payments for the value of avoided network costs, we note the problem of calculating network value without the ability to effectively identify the time and locational impact of DG. One possible approach is to adopt the current Victorian arrangements which provides for a portion of avoided network costs to be passed through to embedded generators. Embedded generators also receive the benefit of avoided Transmission Use of System charges, which are a pass through for DNSPs. Solar PV should be treated the same as all other DG. As such, any additional subsidies should be removed.

**Benchmarking**

The Commission has set out a range of possible approaches to benchmark the sector. In outlining the options the Commission observed that all approaches have some methodological issues. Combined with the small and diverse sample size of NSPs, these issues are likely to blunt the effectiveness of benchmarking. Given all these issues we believe the AER will need to undertake a significant amount of preliminary work before any benchmarking tool could usefully be applied as part of the regulatory determination process. We support the recommendation that any potential benchmark be tested through independent peer review to ensure it is sufficiently robust prior to use. We also support the Commission's view that benchmarking will not be able to be used as the sole tool for assessing network

revenues for the next period, and note that it may never be of a standard to be more than an input for revenue decisions.

## Rule Changes

*Network revenue*

Recent debate has focused on whether the rules constrain the Australian Energy Regulator (AER) from amending NSPs' revenue proposals and encourage NSPs to 'over-invest'. As set out in the report the rules are designed for profit maximising businesses. All the available evidence to date shows the rules are working for the private NSPs. As such, caution should be exercised before the rules are changed.

The Commission has noted that there is limited evidence that the AER is constrained when undertaking revenue determination. Further, in their evidence before the recent Senate Select Committee on Electricity Prices the AER Chairman stated that he could not think of an occasion where the AER had accepted the original NSP demand forecasts for a revenue determination[1].

The AER recently sought greater powers to allow them to impose, in their view, impartial revenue allowances. This has largely been granted by the AEMC in the recent network rule changes. The onus will now be on the AER to use this discretion appropriately. As Professor Yarrow has observed there are risks in granting a regulator too much discretion, as they can never be truly independent. He believes that the regulator is not immune to public opinion, arguing that revenue allowances could be set too low either due to lack of information or for political reasons[2]. Given the recent statements by the AER, there is a risk that they will use their new discretion to push revenue allowances too low in an attempt to "correct" for perceived generosity under the previous rules.

Some commentators have suggested that the Weighted Average Cost of Capital (WACC) in recent determinations has been set too high, encouraging 'over-investment'. The esaa maintains that it's not a credible argument that NSPs are driven to invest by the level of WACC in one period, as assets will last for many regulatory periods. If an NSP 'over-invested' based on the WACC in one period they would be taking a significant risk. The Commission has noted that unless an NSP has an expectation that the WACC will continually be set too high there is no incentive for the NSP to respond to a high WACC in one regulatory period.

The Commission believes that the focus for revenue determinations should just be on the overall reasonableness of the AER's decision. The esaa does not accept this argument. To come to their overall judgement the AER would have had to assess a

[1] I cannot think of a circumstance where we would have accepted the raw forecast put in front of us. We do have the power to examine and to substitute our own forecasts. That then has implications for the amount of capital that we allow. On many occasions we have considered that the proposals put in front of us could be deferred to later periods, because our view of demand forecasts is less than that put forward by the business.

[2] Yarrow, *Preliminary views for the AEMC – Economic regulation of network service providers rule change process*, 2012.

number of sub-components – the building blocks set out in the rules. Therefore, their conclusions about each element are relevant, as they feed into the AER's overall revenue allowance decision. However, interactions between elements should be taken into account by the AER when making a determination, or by the Tribunal when assessing an appeal.

*Ex post efficiency review of capital expenditure*

The PC has proposed that the AER should carry out ex post reviews of capital expenditure where an NSP has invested more than assumed by the regulator in its revenue determination. Inefficient expenditure would not be rolled forward into the regulatory asset base. The AEMC has given the AER this power as part of the network rule change.

Implicit in the assumption that such a safeguard is necessary is an argument that incentives may be inadequate to prevent an NSP from ensuring all investment is efficient. This supposition conflicts with the intention in the rest of the rule changes to ensure that incentives are appropriately calibrated. It also purports to be a remedy to a phenomenon – inefficient expenditure above the AER's baseline - that has not been clearly identified; more commonly, companies have spent less than their allowance.

As such the need for such a safeguard has not been established. This might matter little if implementing these rules was costless, but it is not. Firstly, it will use up part of the AER's limited resources, which would surely be better used on matters other than attempting to find inefficient expenditure that the incentive framework is designed to preclude. Secondly, it is no straightforward matter to decide, with the benefit of hindsight, how much an NSP should have invested. An aggressive approach by the AER could easily lead to legitimate expenditures that were made prudently and in good faith being deemed "inefficient" and disallowed. This risk to what is, by the time of the decision, sunk expenditure is a material risk for the investors that have funded the investment. As such, it puts upward pressure on the cost of capital.

*Reliability and access*

The esaa supports the AEMC collecting better data about the value consumers place on reliability through the Australian Bureau of Statistics and other parties. This could allow reliability standards to be set with clearer reference to the value consumers place on it. Quantifying this value is not a straightforward process and will likely be highly dependent on contingent factors, such as how the proposition is framed and on consumers' recent experiences of reliability. The esaa notes that the AEMC is currently undertaking detailed work on this complex issue. The relevant consideration when examining possible models for reliability standards is transparently balancing the value that customers put on reliability against associated costs. We also support national performance incentives for meeting reliability standards.

Consistent with the AEMC Transmission Frameworks Review, the esaa believes that planning should be left to Transmission Network Service Providers. The AEMC is currently examining whether a new pricing model should be introduced for generator access to the transmission network. It is currently proposed that generators could

pay to have firm access to the transmission network, the optional firm access (OFA) model. If introduced this would be one of the most significant changes to the market since the introduction of the National Energy Market. As such, changes to the pricing of the transmission network should not be made lightly. While the Commission has undertaken some preliminary work on this issue, a substantive cost benefit analysis would be needed prior to proposing such substantive changes to the current regulatory framework. In particular, we think it is slightly premature to start discussing using OFA as a precursor to nodal pricing.

**Other issues**

*Privatisation*

As noted by the Commission, public network managers often face conflicting objectives from the government shareholder. Removing the business from government hands would enable managers to operate under a coherent framework. Governments would still be free to pursue the other objectives, but it would be through direct government action rather than indirectly through a corporatised entity. For example, governments would still have a role in setting the regulatory framework that businesses operate under and in providing assistance to vulnerable households.

*Governance*

Given the recent announcement by the AEMC to provide the AER with greater discretion in handling network revenue decisions, it is timely to assess whether any changes need to be made to ensure the AER is well placed to exercise its new powers. As such, the esaa supports the proposal to assess whether the AER is appropriately resourced. The question of resourcing is intrinsically linked to the structure/location of the AER. The esaa believes that the AER would be best placed to carry out its regulatory functions if it were separated from the Australian Competition and Consumer Commission (ACCC). If it is decided that the AER should remain part of the ACCC, it should be given greater autonomy over its budget and administration.

The industry believes consumers will benefit from a specialist national consumer body that can advocate in network determinations, government energy schemes and various other areas of energy reform. It is essential that such a body is structured to represent the interests of all energy consumers, particularly middle-class households who are not represented by any existing customer advocates. Low income and vulnerable customers are already represented by a variety of consumer groups, as are the elderly and larger business users. To deliver real value for all energy users, a national consumer body has to specifically represent broad not narrow interests.

*Rule change mechanism*

There are concerns both within the industry and more generally about the time it takes to complete a rule change process. While it is desirable to conclude a rule change process as quickly as possible, this may not always be possible given the complexity involved. The esaa accepts it is desirable to expedite a process where a significant amount of work has been done and as such support supports extending current provisions for expediting rule changes (National Electricity Legislation, ss 96

and 96A) to rule change proposals that originate in the types of reviews discussed by the Commission. However, we do not support by-passing the AEMC and allowing the South Australian Minister to change the rules directly, as it undermines the benefits of having a single expert body responsible for rule changes. Having the AEMC as the party with the sole responsibility for changing the rules provides certainty for market participants. The AEMC's expertise and consultation process are valuable in that they frequently lead to 'a more preferable rule' being made than the one originally proposed.