Electricity Network Regulatory Frameworks—Draft Report

Submission from

Jemena Limited

to the

Productivity Commission

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1 Introduction

The Commission's terms of reference focus primarily on "the use of benchmarking as a means of achieving the efficient delivery of network services and electricity infrastructure".

We agree with the Commission that "resolving benchmarking … is worthwhile, but only as a component of a more fundamental, nationally focussed, package of reforms that addresses the major, interlinked regulatory barriers to the efficiency of electricity networks"[1] and support the Commission's decision, on that basis, to examine the regulatory framework more broadly. In particular Jemena supports the Commission's examination of opportunities for advancing the National Electricity Objective (**NEO**) through changes to utilisation and pricing rather than focussing only on efficiency of expenditure. The result is a comprehensive, thoroughly researched and coherent draft report with draft recommendations that will provide a sound basis for policy development.

In all but a few instances Jemena supports the Commission's draft recommendations, a number of which are consistent with or complement rule changes which the AEMC has now confirmed in a final position paper which foreshadows publication of a final rule determination by 29 November 2012.[2]

1.1 Jemena's electricity distribution interests

Jemena owns and operates the Jemena Electricity Network which serves 320,000 consumers in north western Melbourne. Jemena also has a 50 per cent interest in the ActewAGL Distribution Partnership which serves 170,000 electricity customers in the ACT and south-eastern NSW, and a 34 per cent interest in United Energy Distribution which has 630,000 customers in south-eastern Melbourne and the Mornington Peninsula.

The AER regulates all of these businesses and so they will be affected directly by any changes to the National Electricity Law (**NEL**) and/or National Electricity Rules (**NER**) that follow from the Commission's inquiry.

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1 Productivity Commission 2012, *Electricity Network Regulatory Frameworks*, Draft Report, Canberra, p. 2.

2 AEMC 2012, *Economic Regulation of Network Service Providers, and Price and Revenue Regulation of Gas Services*, Final Position Paper, 15 November 2012, Sydney, p. i.

1.2 Jemena's submission

In the remainder of this submission we comment on those aspects of the draft report and the Commission's draft recommendations where we believe we have something useful to add, or where we have a different position to that reached by the Commission. We do not address the second limb of the Commission's inquiry which deals with the delivery of interconnector investment in the NEM.

Jemena has also contributed to and supports the Energy Networks Association's submission on the draft report.

2 Comments on specific aspects of the Commission's draft report

In this section, Jemena provides comments on specific aspects of the Commission's draft report where we believe we have something useful to add, or where we have a different position to that reached by the Commission. Those aspects are:

- incentive mechanisms and benchmarking
- a NEM-wide licensing scheme
- fast tracked rule changes.
- the use of benchmarking
- smart meters, time-of-use tariffs, demand management, distributed generation, and reliability.

In particular, we submit that the Commission should reconsider its draft recommendations on:

- the introduction of an ex post prudency test for capex
- developing a NEM-wide licensing scheme.
- fast-tracking rule changes that originate in independent reviews.

2.1 Incentive mechanisms and benchmarking

The shortcomings of current capex incentive arrangements are well understood. There are strong incentives for businesses to defer capex within a regulatory period and generally to spend less than the regulatory allowance. These incentives are amplified, particularly for short-lived assets, when actual depreciation rather than forecast depreciation is used in the RAB roll-forward calculation. Incentives are also affected if there is an expectation that there will be a long term difference between the regulatory weighted average cost of capital (**WACC**) and the business's actual cost of capital.

The AEMC has addressed these shortcomings in the anticipated rule changes which will provide for the AER to develop a "capital expenditure sharing scheme" and change the way in which the regulatory WACC will be determined. In Jemena's view, these changes together have potential to bring about significant changes in business behaviour. Of course much will depend on how the AER goes about implementing the new rules. For example, it is our strong view that, to be

effective, a benefit sharing scheme should be continuous and symmetrical.[3] We are therefore concerned that the AEMC has elected not to require that a sharing scheme have either of those attributes[4] and that, absent that direction, the AER may implement an inferior scheme. We note that the AER has already shown a predisposition towards asymmetric schemes in its initial rule change proposal which was simply to penalise expenditure in excess of the allowance.

2.1.1 Ex post capex reviews

As well as the changes mentioned above, the AEMC has confirmed that the anticipated rule changes will include an ex post capex review regime[5]. Jemena is particularly concerned at this development and that the Commission should also favour such a regime, albeit different in detail to the AEMC's, in draft recommendation 5.4.

In Jemena's view the Commission's analysis[6] does not support draft recommendation 5.4 and we submit that the Commission should re-consider its position.

The ex post review regime comes on top of a number of other significant changes:

- new rules now confirmed by the AEMC in its final position paper and, in particular:
  - new incentive arrangements for capex (to be developed)
  - changes to the way in which the WACC will be determined
  - introduction of capex re-openers and a contingent projects mechanism for distribution network service providers (**DNSP**s)
  - clarified/increased discretion for the AER

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[3] The ENA's submission dated 16 April 2012 in response to the AEMC's directions paper includes a report prepared by PricewaterhouseCoopers and NERA Economic Consulting which describes in detail the desirable attributes of an incentive scheme, including that it be continuous and symmetrical. The report also sets out the design principles for an ex post prudence test for capex. The ENA's submission is available at http://www.aemc.gov.au/Media/docs/Energy-Networks-Association-ENA---received-20-April-2012-e74babb7-0167-40d1-bc7d-2f0979c119ad-0.PDF. The PwC/NERA report is included as Attachment C.

[4] AEMC 2012, *Economic Regulation of Network Service Providers, and Price and Revenue Regulation of Gas Services*, Final Position Paper, 15 November 2012, Sydney, section 7.2.3.

[5] AEMC 2012, *Economic Regulation of Network Service Providers, and Price and Revenue Regulation of Gas Services*, Final Position Paper, 15 November 2012, Sydney, section 7.4.3.

[6] Productivity Commission 2012, *Electricity Network Regulatory Frameworks*, Draft Report, Canberra, pp 208-209.

  - the network service provider's (**NSP**'s) proposal is no longer the starting point in the AER's assessment process

- likely changes to the merits review regime.

Even without ex post capex reviews, these changes together create significant uncertainty for NSPs which will only be resolved over time and with experience. The AEMC's ex post regime simply compounds that uncertainty.

The Commission observes that "ex post reviews can provide an additional deterrent to inefficient spending". That may well be the case. However there are important questions that need to be answered:

- are other measures so ineffective that an additional deterrent is necessary?
- if other measures are not producing the desired behaviour is an ex post review regime the only/best response?
- if an ex post review regime is to be introduced, in whatever form, will it produce a net benefit?

In Jemena's view, the better approach would have been for the AEMC to proceed without an ex post review regime and review the situation after the other changes have bedded down and their effects have been assessed. Only then should an ex post regime be considered. As it is, it will be difficult to differentiate the effects of the multiple changes that are about to be introduced.

The Commission suggests[7] that DNSPs could manage the risks of ex post review by seeking pre-approval for expenditure in excess of allowances. As well as providing for capex re-openers, the new rules will also extend the contingent projects mechanism to DNSPs.[8]

In practice, pre-approval may not be available for some categories of capex. For example, capex programs such as for demand-driven new connections, where DNSPs have an obligation to connect, and associated extensions and expansions constitute a significant proportion of total capex for DNSPs. In the case of Jemena's electricity network in Victoria (**JEN**), $241 million or 49 percent of gross

[7] Productivity Commission 2012, *Electricity Network Regulatory Frameworks*, Draft Report, Canberra, p. 209.

[8] AEMC 2012, *Economic Regulation of Network Service Providers, and Price and Revenue Regulation of Gas Services*, Final Position Paper, 15 November 2012, Sydney, p. 13.

capex ultimately approved by the AER for the 2011-15 period related to reinforcement and demand connections.[9]

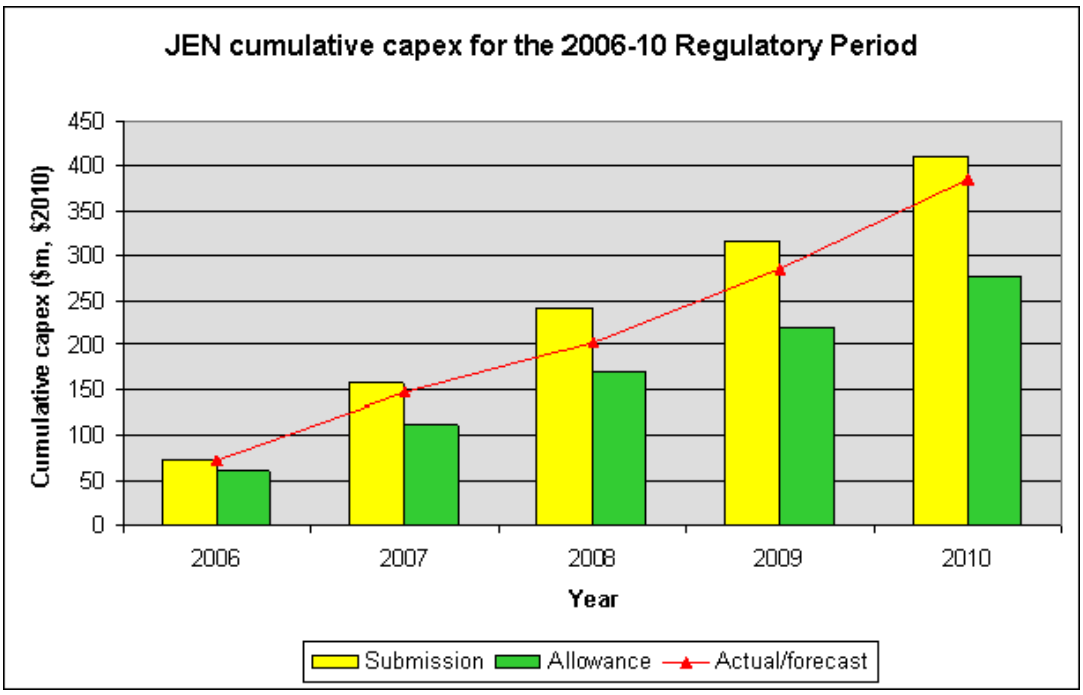
Expenditure for a program as a whole may exceed the allowance but the costs of individual activities within such programs will rarely exceed the thresholds for pre-approval review.

In Jemena's view the pre-approval and contingent projects mechanisms, rather than providing a means of managing the risks of ex post review, will introduce significant new distortions of their own. It is likely that, with the rule changes confirmed in the AEMC's final position paper, including the 2 new mechanisms, the AER will be inclined to exercise its discretion to set capex allowances for DNSPs at the lowest justifiable level, and perhaps lower, so that DNSPs must come "cap in hand" for approval of additional capex if they are to avoid the risk of ex post review. The AER will effectively be micro-managing the businesses. Not only is this inefficient and administratively burdensome for businesses and the AER, it is also contrary to the philosophy and spirit of an incentive based regulatory regime.

The likely alternative is that businesses will manage the risk of ex post review by spending no more than their allowances, even where the businesses themselves consider that additional expenditure would be prudent and efficient. If allowances are set at unreasonably low levels, this could have serious consequences that would not be in the long term interests of consumers. By way of illustration, the figure below shows the relationship between JEN's cumulative forecast and actual capex spend for the 2006-10 regulatory period compared to the allowance determined by the Essential Services Commission of Victoria (**ESC**). The figure clearly demonstrates that, for the 2006-10 period, JEN consistently spent very close to its own forecast.

[9] AER, *Final decision Victorian electricity distribution network service providers Distribution determination 2011–2015*, October 2010, Table 8.40, and

AER, *Jemena Electricity Networks (Victoria) Ltd Distribution determination 2011–2015 Pursuant to Orders of the Australian Competition Tribunal in Application by United Energy Distribution Pty Limited (No 2) [2012] ACompT,* 8 September 2012, Table 13.



One can speculate what the effect would have been had JEN restricted its expenditure to the allowance.

We acknowledge that the AEMC has already determined to introduce an ex post capex review scheme. However, we encourage the Commission to re-consider its draft recommendation. In Jemena's view there is a strong case for a recommendation that ex post capex reviews are an inappropriate measure at any time if there are effective ex ante incentive mechanisms in place. If there is to be a recommendation for the introduction of ex post review it should be qualified. Ex post reviews should only be considered if other measures are ineffective.

Jemena commissioned expert economic advice from Castalia to consider, in particular, whether the introduction of ex post capex reviews, in addition to introducing an efficiency benefit sharing scheme for capex and making changes to how the WACC is determined, would produce better (or worse) outcomes in advancing the NEO.

Castalia's report is attached to this submission. In summary, Castalia concluded that ex post reviews are "…both unnecessary and likely to be counterproductive. The incentive for inefficient overspending claimed by the Commission does not exist and such reviews are likely to impose additional costs and risks on network businesses and customers."

2.2 A NEM-wide licensing scheme

Jemena notes the Commission's draft recommendation 11.2 which outlines a process for establishing a uniform NEM-wide licensing scheme where the AER would be the licensing authority.

While such a proposal has some appeal, it is a means to an end rather than an end in itself. It seems that, if there is agreement to adopt a uniform national approach for some aspect of infrastructure regulation, the Commission's objectives could be achieved just as readily by including obligations in the NEL or NER that apply to DNSPs and/or transmission network service providers as the case may be. As with the Commission's proposal, this mechanism would still require that jurisdictions relinquish control as national requirements are established. However it is difficult to imagine that the jurisdictions would ever relinquish all control. Even if there was a national licensing regime, jurisdictional legislation would still be necessary, including to authorise licensees to perform necessary functions such as creating easements and entering properties.

Importantly, licences to operate are material assets for a business such as Jemena. Among other things, they underpin the business's future cash flows and ability to raise finance. Accordingly, any changes to the legislative and administrative framework surrounding them must be approached with caution. Jemena's preference is for infrastructure licensing to remain with the jurisdictions.

In Jemena's view a licence should ideally be—like a vehicle driver's licence—a minimal document simply certifying that the holder is a fit and proper person to engage in the licensed activity. All the conditions that attach to a licence should be contained in applicable law and other enforceable instruments external to the licence. The licence itself should not be a vehicle for promulgating policy.

Furthermore, and consistent with the principle of separation of powers, the licensing authority should not have the power to set the conditions of a licence if that authority is also responsible for enforcing compliance with the licence. For example, in NSW, the Minister issues utility licences on the advice of the Independent Pricing and Regulatory Tribunal which also oversees compliance. We see this as preferable to the arrangement in Victoria where the ESC is responsible for issuing licences with conditions that the ESC itself determines, and for compliance/enforcement.

2.3 Fast tracked rule changes

In draft recommendation 21.4, the Commission proposes that the AEMC be given the power to expedite rule change requests and that the South Australian Minister

be given a broader power to make rules. This would be an extension of existing provisions which allow for expedited publication of non-controversial and urgent rule changes (NEL, s. 96) and fast-tracking of rules where there has been previous public consultation (NEL, s. 96A). The Commission considers that this extension would be desirable and appropriate where rule changes arise from recommendations from an appropriately conducted independent review and fast-tracking has been agreed by the SCER.[10]

Jemena considers that any expedited process should include an appropriate level of stakeholder consultation and allow for due consideration of the issue being addressed. Caution should be applied in any process to expedite rule changes following reviews by bodies other than the AEMC. This is because:

- a transparent and consultative rule change process is essential for investor confidence
- reviews should concentrate on policy rather than be diverted by the detailed considerations that arise with rule changes
- the outcomes and recommendations of reviews, whether conducted independently or by the AEMC itself, do not necessarily translate directly into new rules—fast-tracking may lead to materially inferior outcomes in terms of the NEO.

Jemena considers that an AEMC led rule change process that retains an appropriate level of stakeholder consultation is a minimum requirement. This could be realised by extending current provisions for expediting rule changes (NEL, sections 96 and 96A) to change proposals that originate in the types of reviews discussed by the Commission. It follows that it would not be appropriate to provide the South Australian Minister a new power to make rules by-passing the current process.

2.3.1 The rule change process must be transparent

The NER establish the framework within which the electricity industry operates. Revenues and returns for substantial investments in Australia's electricity infrastructure are therefore dependent on NER design. Stakeholders place high value on the rule change process being transparent, considered and consultative. How policies established through reviews are reflected in the NER is of significant importance to stakeholders, rather than a burden as the Commission suggests.[11]

[10] Productivity Commission, *Electricity Network Regulatory Frameworks*, Draft Report Volume 2, October 2012, Draft Recommendation 21.4, p. 721.

[11] Ibid, p. 721.

The Commission suggests that rule changes arising from an appropriately conducted independent review could be expedited and for this to also apply to reviews completed within the last two or three years[12]. It is not clear how an assessment would be made as to whether a review was independent and appropriately conducted. Neither is it clear who would make this assessment.

Jemena also considers that any change to the NEL should be applied prospectively. Having an expedited rule change process to apply to recommendations from past reviews would deny stakeholders the chance to respond to those reviews in a way consistent with an expectation of fast-tracked rules. Stakeholders might have approached the review differently had they been aware that a resultant rule proposal would be expedited. Moreover, some stakeholders that may be affected by a changed rule and would contribute to an AEMC rule change process may not have participated in the historical review.

2.3.2 A clear distinction between reviews and rule changes is important

Jemena considers that there should remain a clear distinction between independent reviews that drive policy decisions and the rule change process that may give effect to policy.

Reviews generally consider high level policy or the performance of previously implemented rules. Such reviews may identify the need for potentially significant rule changes. The NER detail how policy is implemented in a way that is practical and consistent with the NEO. In the past, reviews have not gone, and didn't need to go, into the detail that is a necessary part of the rule change process.

To maintain a transparent rule change process where rule changes are carefully considered, the Commission's recommendation would require independent reviews to delve into the detail of rule changes, potentially providing draft rules, rather than focusing on the policy. Depending on the nature of its review, an independent review body may not have the necessary legal and economic skills, or detailed understanding of the rules, to develop a rule that would meet the AEMC's "more preferable rule" standard. At the very least, acquiring these skills and knowledge could prolong and potentially bog down an independent review. Undesirably, this would also remove the AEMC, as the rule experts, from performing that role.

There is currently a well-functioning separation of roles: SCER exercises policy-making functions, AEMC undertakes rule-making and reviews, and the AER performs regulatory and enforcement functions. Reviews undertaken by the AEMC

[12] Ibid, p. 720.

report to SCER which then deliberates on what, if any, rule changes to raise with the AEMC. Any other person can also raise a rule change based on the AEMC or other review recommendations at any time. This process functions well and is recognised as good regulatory practice. Fast-tracking recommendations from independent reviews would be inconsistent with this framework.

2.3.3 Review outcomes do not simply translate into new rules

Just as the Commission itself has recognised the need to look beyond the narrow, benchmarking, focus of its terms of reference in the current inquiry, so the AEMC will take as wide a view as it considers necessary when processing a rule change request. As a result, when a rule change is raised from a review and enters the AEMC rule change process, areas not previously considered in the review can come to light. This is because the rule change process considers the practical details of implementation more thoroughly against the NEO and the current construct of the NER. These new areas can be subtle nuances or 'game changers' and can be identified by both AEMC diligence and stakeholder consultations.

Jemena notes that, even when the AEMC has conducted reviews and its recommendations have led to rule change requests from the Ministerial Council on Energy (**MCE**), there have been cases where the rule change process has resulted in the AEMC making a 'more preferable rule' in its final decision. Examples of this include:

- The 'Interregional transmission charging' rule change which was raised by the MCE in February 2010. This rule change originated from the AEMC's 'National Transmission Planner' review in 2008. It remains open after a number of extensions due to difficulties in attaining a workable solution that clearly contributes to the NEO.[13]
- The 'Network support payments and avoided TUoS for embedded generators' rule change which was raised by the MCE in November 2010. The MCE raised this following a recommendation from the AEMC's 'Stage 2 Demand Side Participation' review. It was raised on the basis of eliminating a perceived double payment to embedded generators. However, detailed work within the rule change process established that the issue identified was not pervasive, and two payments could, in some cases, be justified. A more preferable rule without the detrimental impacts to the NEO of the original recommendation was made in December 2011.[14]

[13] See AEMC, *Inter-regional Transmission Charging*, Discussion Paper, 25 August 2011.

[14] See AEMC, *Network Support Payments and Avoided TUoS for Embedded Generators*, Final determination, 22 December 2011.

- The 'Scale efficient network extensions' rule change was raised by the MCE in February 2010. This stemmed from the AEMC's 'Review of Energy Market Frameworks in light of Climate Change Policies'. To be workable, the final rule published in June 2011 was a more preferable rule which differed from both the rule change proposal submitted by the MCE and all of the options initially proposed in an AEMC options paper.[15]
- The 'Distribution Network Planning and Expansion Framework' rule change was raised by the MCE in March 2011. This rule change originated from the AEMC's 'Review of National Framework for Electricity Distribution Network Planning and Expansion'. The more preferable rule made in October 2012 incorporates several policy modifications and a number of amendments to improve and clarify the application and operation of the new national framework.[16]

This highlights the risk that review recommendations can potentially lead to inferior rule outcomes if changes are expedited and denied the rigour of the AEMC's standard process.

There can be no confidence that an expedited process for translating review outcomes into the NER will lead to the most preferable rules, especially where the review is undertaken by a body other than the AEMC. The AEMC should not (and, as a rule making body employing best practice, should not want to) make substantial changes to the NER without appropriately testing them with stakeholders to ensure they reflect the policy intent in a way that best contributes to the NEO. To do otherwise risks poorly developed rules and, potentially, subsequent rule changes to correct error and better align the rules with the NEO. Such an outcome, which is at least possible if rule changes are expedited without adequate AEMC and stakeholder involvement, would not be efficient.

2.4 The use of benchmarking

Jemena has previously made a submission in response to the Commission's issues paper[17]. In that submission we focused on the practical and empirical constraints that bear on the use of benchmarking in the regulatory context. In summary, our conclusion is that:

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[15] See AEMC, *Scale Efficient Network Extensions*, Final determination, 30 June 2011.

[16] AEMC, *Distribution Network Planning and Expansion Framework*, Draft determination, 11 October 2012 p. i.

[17] Jemena Limited, *Electricity Network Regulation—Issues Paper*, Submission from Jemena Limited to the Productivity Commission, 20 April 2012.

> While there is a wide variety of benchmarking techniques, there are many practical constraints on their application, not the least being the availability of reliable and comparable data. Benchmarking can be useful as a preliminary filter or sanity check on NSPs' proposals and as an adjunct to other assessment techniques. It may also be used more directly in identifying best practice for tightly defined sub-components of expenditure. However, in a building block framework, benchmarking cannot replace the detailed assessment of costs as a means of setting revenues and prices.

and that:

> The AER now has extensive information gathering powers under the NEL and it is exercising those powers. Over time, that should produce a data-set that could support more extensive use of benchmarking and the use of more sophisticated benchmarking techniques; however that is some way off.

We note that the Commission, in Chapter 8 of the draft report, reaches essentially the same position and we support the Commission's draft recommendations in that Chapter with one minor exception. In draft recommendation 8.5, the Commission proposes that, subject to certain pre-conditions, it would be "for a network business to provide quantitative evidence demonstrating why its cost forecast was preferable in meeting the National Electricity Objective."

In Jemena's view the test should be against the Revenue and Pricing Principles[18] (**RPP**) rather than the NEO. The NEO is a qualitative statement and any assessment against the NEO is necessarily subjective. The assessment of a business's detailed cost proposal is a quantitative matter and should be made against a quantitative criterion. The RPP provides such a criterion. Given the structure of the NEL, it must be the case that, if a proposal satisfies the RPP, it will also be consistent with advancing the NEO.

2.5 Peak demand and demand management

Jemena agrees with the Commission that growth in peak demand is a key driver of investment in network capacity and that there is scope to utilise demand management options to mitigate the effects of peak demand growth. Jemena is pleased to see the Commission exploring opportunities for advancing the National Electricity Objective (**NEO**) through changes to utilisation and pricing, rather than only focussing on efficiency of expenditure. The Commission's report canvasses a range of demand management approaches, including:

[18] NEL, s. 7A.

- Cost reflective pricing
- Residential direct load control programs
- Industrial and commercial load management contracts, and
- Distributed generation.

Each of these approaches has different levels of effectiveness in mitigating the effects of peak demand growth. Jemena has not commented on all the demand management approaches summarised by the Commission. However, below we comment generally, where we wish to affirm a different view, or an extension to the view adopted by the Commission.

2.5.1 Cost reflective pricing

Jemena supports the Commission's observations that network charges generally fall short of providing cost reflective signals to customers about capacity constraints on the network and that "flexible pricing is more economically efficient than flat rate pricing because the rates at different times are more closely related to the costs of supplying power at different times"[19]. We note that JEN has provided all of its electricity customers with the option to opt in to a time of use tariff since 1994.

Jemena supports in principle the Commission's recommendation to phase-in cost-reflective network pricing. Cost-reflective tariff structures can provide a significant incentive for consumers to manage and alter their energy consumption patterns. However, Jemena is concerned at the level of prescription implicit in draft recommendations 11.3 to 11.5. If implemented, those draft recommendations would add cost and administrative burden, and restrict flexibility and opportunities for innovation.

Price signals play a key role in many consumption decisions. The extent of the response by customers to flexible pricing options will depend on the strength of the price signal and customers' ability to adapt. In order to realise the potential benefits of flexible pricing, a sufficient number of customers must choose to respond to the price signals and change their consumption behaviour. JEN is already well advanced in the continuing facilitation of cost-reflective network tariffs that will provide the necessary signal to consumers to reduce consumption at peak times.

[19] *Advanced Metering Infrastructure, Introduction of Flexible Pricing – Position Paper,* David Cornelius (DPI). 21 September 2012. p. 13.

In Victoria, network businesses are in discussions with the Department of Primary Industries (**DPI**) to provide access to flexible network charges for customers and the DPI has recently published its final position on these arrangements. These include among other things:

- a transitional period from 1 January 2013 until 31 December 2015 during which flexible network charges will be available to customers on an opt-in or opt-out basis
- a requirement that any customer opting in to the new flexible tariff structures must provide express informed consent
- customers being afforded flexible reversion rights until at least 31 March 2015 whereby they can opt-in and out of the new flexible tariff structures (subject to specific arrangements)
- a review, to be undertaking by the Victorian Government during the transitional period, to determine if the opt-in/out protections (amongst others) should continue
- that the price differentials between peak, shoulder and off-peak periods should be reasonable and consistent with differentials in existing network tariffs.

Jemena expects that these arrangements will be a significant step towards reducing growth in peak-demand and hence network investment.

2.5.2 Smart Meters

The Commission proposes that distributors should be responsible for staged rollouts on a region-by-region basis, subject to a cost-benefit test and the relevant jurisdiction lifting retail price regulation.[20] The Victorian smart meter rollout provides a useful case study to assess the appropriateness of this recommendation.

In Jemena's view, it is very unlikely that a progressive and discretionary rollout that focuses on localities where the network is constrained – as proposed by the Commission – will pass any cost-benefit test. Such a plan is unlikely to yield the economies of scale or the efficiencies that drive the economics of a rollout.

[20] Productivity Commission 2012, *Electricity Network Regulatory Frameworks*, Draft Report, Canberra p. 341.

For example, The Victorian DNSPs have adopted two different technologies: mesh radio and WiMax. In the case of mesh radio – adopted by 4 of the 5 businesses – information is transmitted from meter to meter until it reaches a central exchange (i.e. a communications mesh). A rollout that focuses on constrained areas of the network could preclude the use of mesh radio because of the distance between meters creating missing links in the mesh.

Furthermore, for so long as there is only a partial rollout, the DNSP will have to maintain 2 metering and data management systems, as well as set up billing systems that work with both types of meter data. The DNSP will also incur increased manual meter reading costs as reading routes become less efficient. In reviewing the costs and benefits of the Victorian roll out, the Deloitte report to the Victorian Department of Treasury and Finance noted that, based on international experience, operating dual systems to support both accumulation and smart meters results in a 23 per cent cost increase.[21]

The draft report proposes that an important starting point for smart meter rollouts is to address the policy risks.[22] The Commission identifies the possibility of a policy change that devalues smart meter assets as one of those risks. The policy decision in Victoria to implement a moratorium on mandatory time of use pricing resulted in a reduced benefits being realised from smart meters, due to the fact that the meters were not utilising the core feature of their design – interval readings. Policy decisions setting the appropriate length of exclusivity derogations and changing technical specifications during the rollout can also create additional and potentially unrecoverable costs for distributors.

DNSPs must be extended the right—as they will in Victoria following the cessation of the exclusivity derogation—to charge exit and restoration fees where smart meters are replaced under competitive arrangements. Network businesses must at least be allowed to recover the costs incurred in rolling out the meters, as well as the incremental costs created by the replacement procedure if third parties choose to replace the original meters. Exit and restoration fees provide an appropriate means for businesses to do that. These costs may include:

- the remaining economic value of the meter
- refurbishment and re-calibration costs where the meter is to be re-deployed

[21] Deloitte for Victorian Department of Treasury and Finance, 2 August 2011, Department of Treasury and Finance Advanced metering infrastructure cost benefit analysis, p. 94

[22] Productivity Commission 2012, *Electricity Network Regulatory Frameworks*, Draft Report, Canberra p. 366.

- back-office administrative charges for facilitating the replacement
- recovery of IT and communications investment costs to facilitate the replacement.

Exit fees should also not be set at a fixed rate. If consumers were charged only a fixed exit fee for a proportion of the remaining economic value and the residual amount is then absorbed into the DNSP's regulatory asset base to be recovered through charges for standard control services, then consumers generally will be subsidising those consumers that choose to change their meter provider. Such an outcome is not efficient, and is unlikely to be in the long term interest of consumers.

2.5.3 Direct load control

Jemena finds direct load control to be a valuable tool for managing demand and to optimise the provision of standard control services. JEN currently has direct load control arrangements with some large customers in its distribution area.

If demand management services are to deliver the intended benefits to consumers, they must remain within the control of the DNSP. This is especially the case with regard to direct load control services. The network business is best positioned to understand where capacity constraints lie within the system and when peak events become critical.

Opening load management services to contestable provision would almost certainly detract from their effectiveness as a network management tool. When services are opened to contestable provision there can be no certainty that the interests of competing providers will be aligned with those of the DNSP and consumers – in fact it is almost certain that they will not be aligned. A DNSP may choose to offer load management and similar services directly or through other parties such as retailers however, ultimately, they must remain within the control of the DNSP.

2.5.4 Distributed generation

The Commission's draft recommendation 13.1 is aimed at facilitating distributed generation (**DG**) for network capacity support and includes a proposal that avoided distribution costs should be shared with distributed generation providers. We note that in Victoria, the ESC's Electricity Guideline No 15 already provides for this to occur. DG providers also enjoy the benefit of avoided TUoS charges. However, DNSPs are exposed to S factor penalties if a DG provider that the DSNP relies on for network support fails to perform and, as a consequence, contributes to an event that causes the DNSP to incur a penalty. In Jemena's experience DG providers

are generally unwilling to indemnify DNSPs against this exposure and consequently, this has been a barrier to the development of network support arrangements with DG providers.

The effectiveness of the Commission's draft recommendation could be enhanced by adding that DNSPs should be exempt from S factor penalties where a DG provider's failure to perform contributes to the event that gives rise to the penalty.

Despite major actual and impending reforms to the regulatory environment, there are still significant regulatory obstacles inhibiting network businesses' use of DG. Further, these obstacles are not uniform across all jurisdictions in the NEM. Until these obstacles are resolved and networks in all jurisdictions face consistent incentives to use DG, setting a standard level of efficient investment in DG is not realistic.

Glossary

AEMC	Australian Energy Market Commission
AER	Australian Energy Regulator
capex	capital expenditure
DNSP	distribution network service provider
DG	distributed generation
ENA	Energy Networks Association
ESC	Essential Services Commission of Victoria
NEL	National Electricity Law
NEO	National Electricity Objective
NER	National Electricity Rules
NSP	network service provider
opex	operating expenditure
RPP	Revenue and Pricing Principles
WACC	Weighted average cost of capital

Attachment – Castalia report

Submission to Productivity Commission—Regulatory Incentives

Report to Jemena

November 2012

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Figures

Executive Summary

In its draft report on the regulatory framework for electricity network businesses, the Productivity Commission recommends an *ex post* review of actual capital expenditure where such expenditure materially exceeds regulatory allowances.[1]

This recommendation is part of a package of measures that the Commission believes is necessary to deter the inefficient over-investment by electricity network businesses, that it claims is occurring.

Other parts of the package of measures are an efficiency benefits sharing scheme (EBSS) for capital expenditure and changes to the way in which regulatory WACC parameters are estimated. Both these measures have been adopted by the AEMC in recent changes to the National Electricity Rules.

The question we ask is: are *ex post* reviews of capital expenditure necessary or desirable, given that the other two measures have been adopted? Do such reviews add to or detract from the overall package?

The Commission believes that such reviews are needed as a safety net in the event that the regulatory framework does not mitigate inefficient overspending effectively.

We conclude that such reviews are both unnecessary and likely to be counterproductive. The incentive for inefficient overspending claimed by the Commission is unlikely to exist. The very small probability of such incentive arising will be addressed by the EBSS and WACC changes. *Ex post* reviews are likely to impose additional costs and risks on network businesses and customers.

Our analysis shows that:

- the theoretical incentive to overspend in the last year of the regulatory period as claimed by the Commission is only valid based on implausible assumptions—a systemic overstatement of regulatory WACC in the order of 100 basis points persisting for the economic life of long lived assets; and
- The evidence that the Commission put forward to show that inefficient over spending is occurring is weak and the Commission has not considered alternative, more plausible, explanations.

We also found little evidence that there has been any systematic upward bias in WACC in the past. However, even if we accept the Commission's view that such bias may have occurred, it is unreasonable for network businesses to assume it would be enduring. In fact, the changes in the WACC methodology, culminating in the latest AEMC rule changes, suggest that any reliance by investors on long run systematic bias would be unwise.

There is also little evidence that the trend to overspend at the end of a regulatory period is a sign of inefficient expenditure. Some NSPs are staying within the cap, but profiling expenditure towards the end of the period, others overspend in all years of the regulatory period.

There are a variety of additional internal and external controls on capital expenditure that would inhibit overspending. It is difficult to see how large and complex businesses could turn on, or off, inefficient expenditure essentially on demand to utilise the Commission's theoretical incentive.

[1] *Electricity Network Regulatory Frameworks Draft Report*, Productivity Commission, October 2012 Recommendation 5.4

The lack of evidence to support concern about the overall incentive for over-spending makes *ex post* reviews unnecessary. But worse, they are likely to be harmful. The harm will arise from the chilling impact on new and replacement investment caused by the risk that efficient expenditure will be disallowed by the AER. Such disallowance will provide a substantial, indeed onerous, penalty to businesses. In circumstances where businesses need to overspend regulatory allowances to maintain service standards and reliability, they may not do so, as such expenditure will trigger an *ex post* prudency review of the entire capital program (if the Commission's draft recommendation was implemented). Faced with this threat, businesses may avoid over expenditure even at the risk of:

- compromising reliability and service standards, and/or
- incurring higher costs to invest at a later date, after a new approved capital expenditure forecast has been established.

The penalties for reducing reliability will likely be less than the risk of disallowed capital expenditure, while there is no penalty to the distributor in deferring the spend that can later be justified as part of a future allowance.

Ex post reviews have been tried before—they were a feature of electricity transmission regulation prior to 2005—but the ACCC abandoned their use as a result of their limitations.

Given the asymmetric consequences of over- and under-investment, any regulatory regime that is guided by the long run interests of consumers should err on the side of over- rather than under-investment. *Ex post* reviews are more likely to inhibit efficient investment than to prevent inefficient investment.

1 Introduction

The Productivity Commission (the Commission) has recommended that, where regulated network service providers' (NSPs') actual capital expenditure is materially greater than the regulatory allowance over a full regulatory period, the entire capital expenditure during that period should be subject to an *ex post* prudency review before the expenditure is added to the regulatory asset base (RAB).[2]

The Commission asserts that such review is necessary as the current regulatory framework incentivises businesses to overspend inefficiently, particularly in the last year of the regulatory period. The Commission believes this incentive arises because there is a systematic upward bias in the regulatory weighted average cost of capital (WACC)—that is, the NSPs' actual cost of capital is less than the regulatory WACC.

The Commission provides evidence that it claims shows:

- that regulatory WACC may have been overstated based on an analysis of the actual and regulatory cost of debt; and
- that greater overspending of capital expenditure tends to occur later in the regulatory period.

On the basis of this evidence, the Commission believes that an *ex post* review is needed as part of a package of measures to avoid inefficient expenditure being added to the RAB and paid for by customers. The three components of the package are:

- An *ex post* prudency review to ensure that only efficient capital expenditure is added to the RAB—*Recommendation 5.4*
- A continuous symmetrical efficiency benefits sharing scheme (EBSS) for capital expenditure to counter the decline in the current regulatory framework of the incentive to spend efficiently as the regulatory period progresses—*Recommendation 5.1*; and
- Changes to the way in which WACC parameters are estimated so that the WACC is not systematically overstated as claimed by the Commission—*Recommendations 5.2 and 5.3*.

In November 2012, the AEMC signalled the introduction of an EBSS for capital expenditure and changes to the estimation of WACC parameters as well as a form of *ex post* efficiency review for capital expenditure.[3] A final determination will be made on this matter by November 29, 2012.

The substance of these rule changes will address the Commission recommendations 5.1, 5.2 and 5.3.

We have been asked by Jemena to report on the need for an *ex post* review in addition to the introduction of an EBSS and the changes to the WACC parameter estimation. Our terms of reference are:

- Comment on the Commission analysis in Chapter 5 of the Draft Report and, in light of that analysis, the validity of its finding that the current incentive

[2] *Electricity Network Regulatory Frameworks Draft Report*, Productivity Commission, October 2012 Recommendation 5.4

[3] *Final Position Paper National Electricity Amendment (Economic Regulation of Network Service Providers) Rule 2012,* AEMC, November 2012

regime encourages businesses, especially state owned ones, to build too much. In particular, comment on whether, under the current regime there is an incentive to inflate the RAB with inefficient overinvestment in order to maximise long term profitability.

- Assuming that the Commission draft recommendations 5.1—5.3 are translated into Rules which, when implemented, are effective in addressing the issues that give rise to them:
  - How would a rational regulated profit-maximising business approach its capital expenditure decisions and how is that process different if the expenditure is within or in excess of the regulatory allowance?
  - What would be the effect of establishing an *ex post* capital expenditure review regime as envisaged by draft recommendations 5.4 and 5.5 in addition to draft recommendations 5.1—5.3? (In responding to this question, assume that the business itself is satisfied that all capital expenditure it spends is prudent and efficient, whether within or in excess of the allowance, but that it has no certainty as to how the AER will view the expenditure *ex post*.)
- Comment on the Commission rationale for proposing draft recommendations 5.4 and 5.5 and whether the changes proposed in draft recommendations 5.1—5.5, if implemented together, are likely to produce better (or worse) outcomes in terms of advancing the NEO, than if only draft recommendations 5.1—5.3 were implemented.

Our report addresses these issues as follows:

In Section 2 we comment on the Commission's analysis of the existence and strength of the inefficient overspend incentive. We look at both the empirical evidence cited by the Commission and modelling under a range of assumptions.

In Section 3 we look at the way in which an EBSS and changes to the estimation of WACC will affect a rational profit maximising business. We also look at the effect of introducing an *ex post* review in addition to an EBSS and WACC changes and the likely response from such businesses.

In Section 4 we look at whether, if the *ex post* review is established in addition to the implementation of the EBSS and WACC changes, the outcomes—particularly in terms of advancing the National Electricity Objective (NEO)—are likely to be better or worse.

2 The Incentive to Overspend

The Commission believes that there is an incentive for NSPs to overspend their regulatory capital allowance inefficiently—particularly in the last year of the regulatory period—so that the additional expenditure is added to the RAB. The Commission suggests this behaviour is profit maximising because of a systematic upward bias in the regulatory WACC—that is the regulatory WACC is greater than the NSP's actual cost of capital.

In this section we:

- Define the various categories of inefficient overspending. This is important because the hypothetical benefits of certain types of overspending to NSPs vary. We then model the strength of the claimed incentive to overspend in the last year of the regulatory period. We also analyse the way in which this incentive might be mitigated by existing internal and external controls on expenditure—Section 2.1; and
- Analyse the evidence presented by the Commission that suggests that such behaviour has occurred—Section 2.2.

The existence in the current regulatory framework for electricity network regulation of an incentive to overspend the regulatory capital expenditure allowance inefficiently is a logical anomaly, since the framework overall is designed to encourage NSPs to underspend their allowance. The existing regulatory framework recognises the possible incentive on NSPs to over-claim in order to get the greatest regulatory capital expenditure allowance. However, the *ex ante* cap on capital expenditure (and operating expenditure) is generally considered an efficient regulatory mechanism to incentivise efficient expenditure and discourage inefficient overspending relative to the approved allowance.

This is because a business that underspends the regulated allowance for either capital or operating expenditure will increase profitability as it will be compensated through the regulated revenue for expenditure that has not been incurred. This incentive has an important role in revealing the actual efficient costs of the business—information that a regulator can take into account when assessing future expenditure proposals by the business.

If there is overspending, the regulated business will suffer reduced profitability as it will lose return of and return on capital for the overspent amount for the remainder of that regulatory period. This penalty is only temporary as, at the beginning of the next period, the capital expenditure is added to the regulated asset base. The value of this penalty decreases during the regulatory period. For example in the last year of the period it is only the loss of return of, and on, capital for a single year (or six months if the overspending occurs evenly throughout the year).

Overall, any incentive to overspend needs to be seen in the context of the built-in incentive to underspend. There is a fundamental disconnect between incentives to over-claim and underspend, and a purported incentive to overspend. In our view, the Commission makes a logical error in comparing the hypothetical benefit of overspending to a situation where an NSP fully spends its regulatory allowance. Rather, any hypothetical profits from overspending need to be considered against the counterfactual of possible profits from under-spending.

The basic framework for regulated infrastructure in Australia—and widely used internationally—is incentive based regulation. This is regulation that broadly relies on

providing financial incentives to achieve efficient outcomes rather than penalties to punish non-performance.

Incentive based regulation evolved because of the limitations of more intrusive cost plus regulation. Such regulation doesn't incentivise the regulated firm to strive for efficiency gains but does incentivise it to exaggerate the level of allowable costs.

The necessary consequence, however, of achieving the efficiency inherent in an incentive based framework is that well performing businesses will earn above the target rate of return set by the regulator.

2.1 Modelling the overspend incentive

We start by defining the various categories of inefficient over-expenditure in Section 2.1.1. We model the strength of the overspend incentive in Section 2.1.2. We also detail the various internal and external controls that mitigate any overspend incentive in Section 2.1.3.

2.1.1 Defining inefficient overspending

There are two broad categories of inefficient over expenditure:

- Pulling forward capital projects—that is implementing projects that would be economically justified at some future time but doing them now, and as a consequence overspending the current regulatory allowance. This is perhaps the most benign form of inefficiency in that the cost to customers is limited to the cost of bringing forward the expenditure, not the expenditure itself; and
- Spending on projects that would never be able to be economically justified. It is this inefficient expenditure—true gold plating—that imposes the highest cost on customers as all of the overspending is inefficient—not just the timing difference of bringing forward worthwhile projects.

Incentive based regulation—based on the incentive to underspend the regulatory allowance—is designed to address both types of inefficient over expenditure.

Just as the costs to customers of these two categories of inefficient over-expenditure are different, so are the strengths of the potential overspend incentive suggested by the Commission for each category:

- In the "pulling forward" category, the excess returns resulting from the difference between regulatory WACC and the actual cost of capital are only earned for the period between the actual construction of the project and the forecast efficient construction date. This is because if the NSP deferred the project to its efficient date it would have received that benefit from that period onwards; and
- In the "gold plating" category, as the project would never be economically justified, the potential excess returns would be earned for the remaining life of the project.

In our analysis in Section 2.1.2 we model the strength of the overspend incentive for both of these categories of overspending.

2.1.2 The strength of the incentive

The current *ex ante* cap regulatory framework for NSPs provides a strong and reliable incentive to underspend both capital expenditure and operating expenditure compared to the regulatory allowances. By under-spending its capital expenditure allowance, an NSP

will gain the return on and of capital on any underspent capital expenditure for the remainder of the regulatory period—that is up to five years.

However, this incentive declines towards the end of the regulatory period. For example, in the last year the gain is limited to a single year (or six months if the under-spending occurs evenly throughout the year).

It is this declining incentive to underspend that has led the Commission to believe that there is in fact an incentive to overspend towards the end of the period. The Commission asserts that there is likely to be an incentive to overspend late in the regulatory period if there is a systematic over statement of the regulatory WACC and the incentive to under spend is weak. The Commission believes that there is a likely upwards bias in the regulatory WACC, such that the regulatory WACC is consistently and predictably higher than the NSP's actual cost of capital.

Put simply:

- If the regulatory WACC is less than the firm's cost of capital the incentive to reduce capital expenditure will be increased; and
- If the regulatory WACC is higher than the firm's cost of capital, the incentive to reduce capital expenditure will be weakened and there is potentially an incentive to over invest.

We examine the evidence for an upward bias in regulatory WACC in Section 2.2.1. For now, we assume that such a bias exists and model both the magnitude and duration of such a bias necessary to create a positive incentive for inefficient over-spending of the capital expenditure allowance.

The proposition put forward by the Commission for the overspend incentive is that NSPs can overspend at the end of the regulatory period and that the resulting penalty—the short term loss of return of and on capital—is more than offset by earning the difference between regulatory WACC and actual cost of capital in the long term.

Modelling the strength of the incentive

In our analysis in this section we model the strength of the overspend incentive for both the "gold plating" and "pull forward" categories of inefficient overspending.

In Figure 2.1 we model the impact of overspending $100 of "gold plated" capital expenditure in each year of the regulatory period using the following assumptions

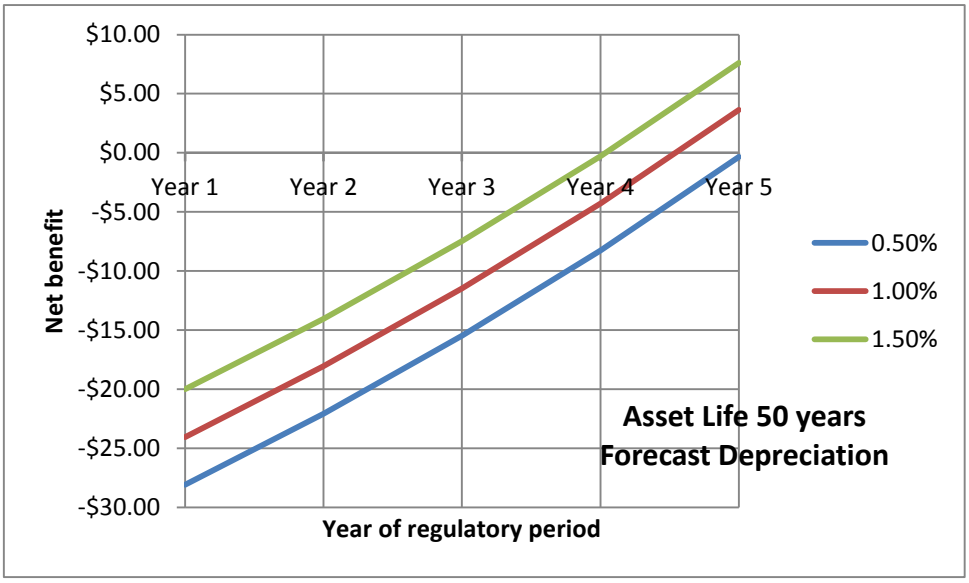
- Upward bias in the regulatory WACC of 0.5 per cent, 1 per cent and 1.5 per cent
- Asset life of 50 years; and
- RAB roll-forward based on forecast regulatory depreciation[4].

This scenario is our base case—it maximises the benefits of inefficient over expenditure by use of a long asset life as well as minimising the penalty to the NSP by use of forecast depreciation. It uses a range of upward WACC biases.

This is similar to the analysis shown in Figure 5.3 in the Commission draft report.

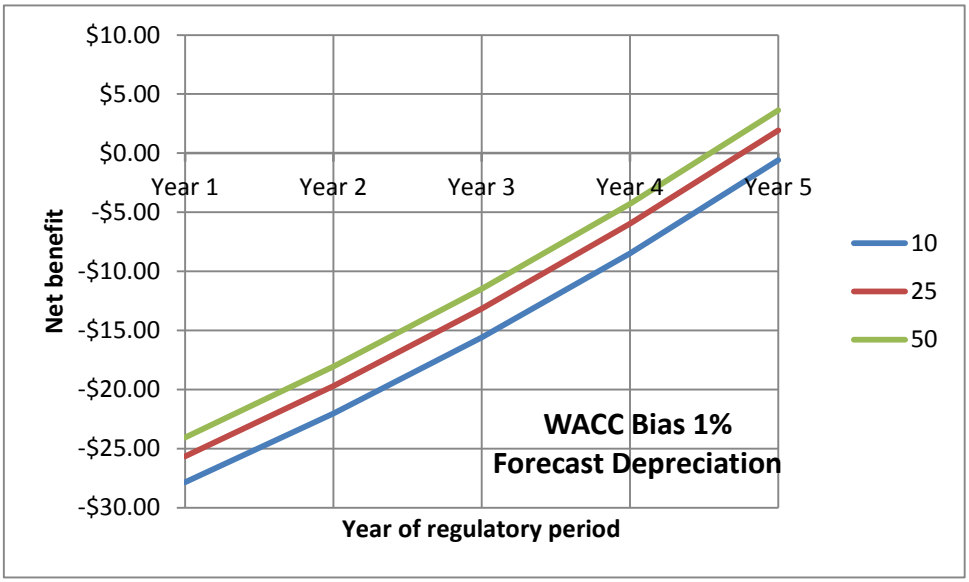
[4] When RAB roll-forward is based on actual depreciation as has been required for transmission to date (NER S6A.2.1(f)(5)) and is now required for distribution businesses in recent AER decisions, there are stronger incentives to defer/underspend than when forecast deprecation is used, especially for short-lived assets.

Figure 2.1: The strength of the overspend incentive—gold plated expenditure



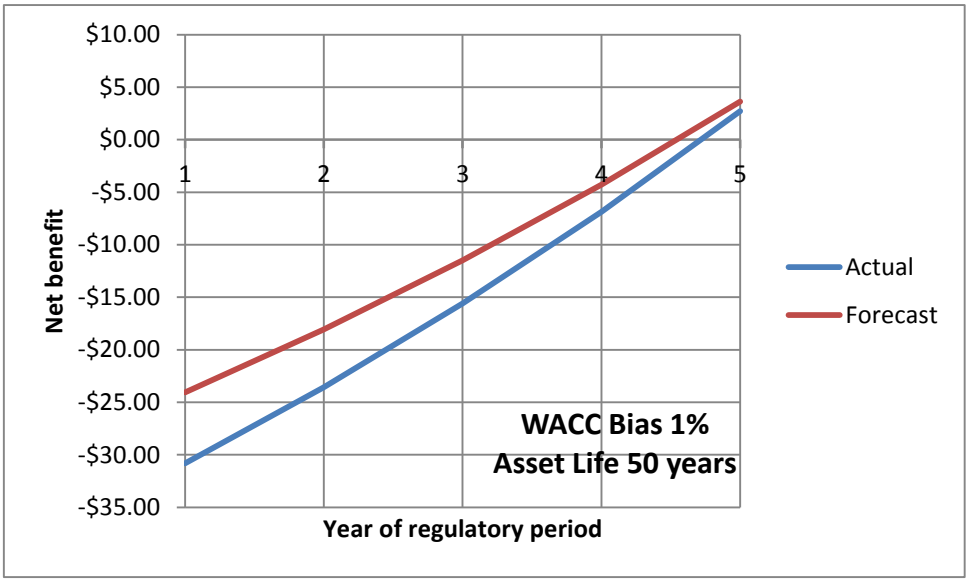
In Figure 2.2 we show the impact of different asset lives on the incentive using an upward WACC bias of 1 per cent and forecast depreciation.

Figure 2.2: Impact of asset lives on the overspend incentive



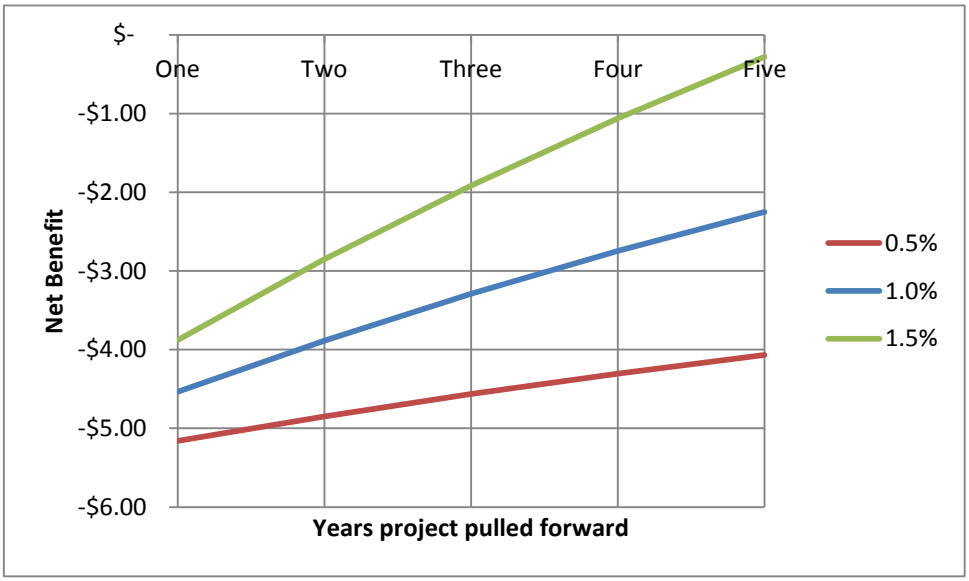
In Figure 2.3 we show the impact of different depreciation methodologies (actual depreciation vs. forecast depreciation) on the incentive using an upward WACC bias of 1 per cent and an asset life of 50 years.

Figure 2.3: Impact of depreciation methodologies on the overspend incentive



In Figure 2.4 we model the impacts of "pulling forward" otherwise efficient projects. We show the net benefits that would occur by advancing these projects by between one and five years using an upward WACC bias of 0.5, 1.0 and 1.5 per cent and an asset life of fifty years. We assume that the project is actually undertaken in the last year of the regulatory period.

Figure 2.4: The strength of the overspend incentive—pulling forward expenditure



If the project is undertaken before the last year, the required WACC upward bias rises to implausible levels—over 2.5 per cent for a project pulled forward five years to year four of the regulatory period.

Modelling results

The results show that for **"gold plated"** inefficient over expenditure the theoretical incentive is very small and only exists in the last year of the regulatory period and where:

- the upward bias in WACC is large—in the order of 1 per cent (the Commission suggests that the upward bias may be in the order of 0.75 per cent based on its analysis of the actual cost of debt of NSPs), and
- the upward bias is sustained for an asset life of greater than 25 years.

Importantly, the incentive does not exist for short lived assets (< 10 years life) except at an unfeasibly high upward WACC bias. The modelling also shows that the incentive does not exist in earlier years of the regulatory period, again except at unfeasibly high WACC differentials—about 2 per cent in the most favourable 50 year asset life case.

The benefit even in the most favourable case is small compared to the value of the over-expenditure.

For **"pull forward"** inefficient over-expenditure, the modelling shows that the incentive does not exist for projects that would be efficient in the next regulatory period. In practical terms, this is beyond the period in which it would be possible to conclude with certainty that such a future project might be efficient.

Actual WACC varies and can distort the incentive

There is a further consideration in that as the NSP's actual cost of capital varies from year to year, the value of the penalty for inefficient over expenditure in the last year can vary.

This is because regulatory WACC is set once at the start of the five year regulatory period. It may or may not be different to the NSP's actual cost of capital at that point. During the five year period the actual WACC will certainly vary as the risk free rate changes in response to market forces.

Since it is the actual WACC in year five that determines the value of the penalty for the NSP, it is possible that the actual penalty will be different to the average penalty used in our model. Even if NSPs expect the regulated WACC to exceed their actual cost of capital on average over the medium term, there is every chance that the actual cost of capital may be high in the last year of the regulatory period, perhaps even exceeding the regulated WACC. The possibility of such variation in penalty would reduce the systematic incentive to overspend in the last year of the regulatory period.

In other words, while the **benefit** of over-expenditure is determined by the average WACC bias over the life of the asset, the **value of the penalty** in the last year of the regulatory period is determined by the actual cost of capital at that time.

Gold plated projects are needed for the incentive to exist

Since the theoretical incentive is only consistent with genuine **"gold plated"** projects—**"pulling forward"** projects have no such incentive—to take advantage of the suggested incentive businesses need to have a pipeline of projects that are inefficient—that is projects that could not be included in a future regulatory proposal either in the next or future periods because they are not prudent or justified. If they were prudent and justified, the profit maximising action would be to undertake the project in the right period and thus gain the returns without penalty.

Further, the projects would need to be able to be commenced quickly without any degree of planning or preparation because the NSP will not be certain until the beginning of year five when the actual WACC at the time is known that the penalty for over-expenditure is sufficiently low to justify the project. The project will also need to be able to be approved outside of normal internal approval processes and should not consume

material resources to plan and manage, because staff will be reasonably fully occupied spending the approved capital expenditure.

Summary

In addition to a material and sustained upward bias in the regulatory WACC and a favourable actual WACC in year five of the regulatory period, the overspend incentive relies on an NSP finding projects or avenues for expenditure that are not and cannot be economically justified and can be initiated at short notice.

2.1.3 Existing controls on overspending

While the Commission acknowledges that there are some existing controls on overspending, it suggests they are inadequate and that an *ex post* prudency review of capital expenditure is necessary to prevent inefficient overspending.

In this section, we detail all of the various controls and constraints that combine to limit inefficient over spending.

Internal processes are reviewed by the AER

There are strong internal controls—NSPs are significant and complex large businesses. By definition, such entities have highly developed expenditure control processes with significant internal review procedures associated with capital expenditure. These processes are reviewed as part of the scrutiny of regulatory proposals by the AER at the beginning of each regulatory period. The objectives of this review—typically by the AER's specialist engineering consultants—are to ensure that only prudent and efficient expenditure is approved and that approved projects are efficiently procured. The review typically begins at the NSP's asset management systems and processes to ensure that assets are efficiently managed and that replacement—either for reasons of condition or load growth—occurs at the optimum time to ensure the minimum lifecycle costs.

These internal approval processes typically use hurdle rates for investment that are generally above the regulated WACC. This is because a regulated NSP still faces some risks in project initiation and execution. While generally all project expenditure will ultimately be added to the RAB, a project could:

- fail entirely with the resulting expenditure being expensed within the regulatory period without ever being added to the RAB thus resulting in a loss for the NSP
- give rise to the NSP not meeting service and reliability standards and thus not achieving the Service Target Performance Incentive Scheme (STPIS) threshold resulting in a loss of revenue; or
- impose additional uncompensated operating costs on the business.

Further, even with investment incentives, NSPs have finite limits on the availability of capital so hurdle rates above the regulatory WACC are important in rationing scarce capital.

For all of these reasons it is difficult to see that in a large and complex organisation these internal controls and processes can be "turned off" for one year in every five to allow inefficient overspending.

The AER review of future capital expenditure has an influence

The Commission assumes that capital expenditure incurred during the regulatory period in excess of the regulatory allowance enters the RAB without any regulatory scrutiny. While this is true in a formal sense, the assessment of capital expenditure proposals at the

start of every regulatory period takes into account the condition of the network at the start of the period and the required investment during the period.

In other words, "excess" capital expenditure in the preceding period would inevitably lead to lower allowances in the next period. Since we have shown in Section 2.1.2 that bringing forward efficient expenditure isn't profit maximising, this external review further mitigates any "pull forward" over expenditure. The presence of significant "excess" expenditure in the previous period may also affect how the AER assesses the next regulatory proposal.

There are also external controls

For both distribution and transmission NSPs there is a requirement under the National Electricity Rules (NER) for large projects involving expenditure of more than $5.0 million to be subject to a regulatory investment test—the RIT-T or the RIT-D. The test is developed by the AER and the process requires public consultation and a high degree of transparency around the expected costs and benefits of the project as well as the various technical options.

Of course, distribution NSPs in particular have significant expenditure on a large number of small projects that are well below the threshold of the RIT-D. Nevertheless if a distribution NSP wishes to overspend only in a short period of time—such as the last year of a regulatory period—the simplest way to do so would be to initiate a small number of major projects—but these are subject to the RIT-D.

Conclusion on expenditure controls

There are a variety of internal and external controls and influences that suggest that capital expenditure is not a tap that can be turned off and on at a whim when the stars align to create the theoretical incentive to inefficiently overspend in the last year of a regulatory period.

2.1.4 Conclusion on the incentive to overspend

If there is an incentive to inefficiently overspend in the current regulatory arrangements, it only exists in special circumstances:

- There must be a long run systemic overstatement of regulatory WACC—and NSPs must believe that this overstatement will continue to occur for the life of long lived assets. Further the actual WACC in the final year of the regulatory period must be less than the regulatory WACC to minimise the penalty for such over spending; and
- The over spending must be on capital expenditure projects that are unjustified and unjustifiable as pulling forward projects that could be included in future regulatory allowances does not create sufficient future benefits to overcome the short term penalty—that is the WACC premium must remain for the full economic life of the asset not just the period by which a project has been brought forward.

Even if these conditions are met, there are a variety of internal and external control, reviews and tests that limit the opportunities to inefficiently overspend.

2.2 The evidence for the inefficient overspending incentive

In this section we look at the evidence for the Commission's assertion that it is reasonable for businesses to believe that regulatory WACC is upwardly biased and will continue to be so in the long term and its assertion that as a result inefficient overspending has occurred.

We look at whether the evidence supports the assertion and also at alternative and more plausible explanations for overspending trend noted by the Commission.

2.2.1 A systematic bias in the WACC

The evidence for such a bias

The Commission's evidence that the regulatory WACC is systematically higher than the actual cost of capital of NSPs is a comparison of the regulatory cost of debt with the actual borrowing costs—Table 5.1 in the Commission report.

The Commission acknowledges that the analysis is superficial as it is *"based on a number of simplifying assumptions and abstracts from the complexities of financial markets"*. Nevertheless, the Commission believes *"there is some suggestion that NSPs may have been overcompensated for the cost of debt in recent years"*.

Those simplifications and abstractions—which we suggest fully explain any difference between the regulatory and actual cost of debt—are:

- **The tenor of debt.** The regulatory cost of debt is based on a ten year term as an efficient NSP would generally seek to match funding tenor with asset life. However as a result of the GFC, liquidity of long dated debt has been poor, forcing businesses generally to seek shorter term debt—typically one or two years. This forced adoption of shorter term debt is nominally at lower cost but exposes businesses to re-financing risk—that is that the debt cannot be replaced at maturity—and future interest rate risk—that is that at maturity interest rates will have risen
- **The regulatory credit rating.** The regulatory cost of debt is based on a notional capital structure—a business with 60 per cent gearing and a BBB/BBB+ credit rating. The actual capital structure and credit rating of NSPs can vary from this hypothetical construct. If an NSP has a higher credit rating—generally because it has a lower gearing, it will have a lower actual cost of debt. However, for equity investors this will come at the cost of lower *de facto* return on equity. In effect, such investors have made a decision to accept lower, but more stable returns than allowed by the regulator
- **The timing difference** between regulatory and actual cost of debt. The Commission's analysis uses the average of the actual cost of debt from the five most recent annual reports of the NSPs. However, the regulatory cost of debt is set at a single point in time and for most of the NSPs in the Commission analysis that time is several years in the past. It is not logical to expect congruence between the cost of debt from a five year average with a point estimate at a random point within that averaging period; and
- **NSPs debt management strategies**. NSPs are free to adopt debt management strategies that differ from the regulatory benchmark of ten year BBB/BBB+ rated debt. They can borrow longer or shorter, they can use fixed or floating rate debt, they can borrow in $A or overseas currencies and if they do they can choose to hedge or not hedge their foreign currency exposure. The debt could be sourced from the market or from a related party as some NSPs are but a part of a larger corporate entity. All of these decisions may have an impact both on the actual cost of debt—as well as the risks that investors take when they deviate from the risk neutral strategy—that is to adopt as far as possible a debt management strategy that mimics the way in which the AER sets the regulatory cost of debt allowance.

Further the Commission's analysis contains some curious anomalies. Given that the actual cost of debt calculated is a five year average from the most recent annual reports, it would be reasonable to expect that the actual cost of debt for each NSP would be similar. However there is a wide variation within the data—in fact the variation between the actual debt costs is greater than the variation between the average cost of debt and the regulatory cost of debt. Ignoring the government owned NSPs, the variance between the highest (Citipower 8.17 per cent) and lowest (SP Ausnet transmission 5.99 per cent) is 218 basis points. Further the actual cost of debt for SP Ausnet (transmission) at 5.99 per cent is markedly different to SP Ausnet (distribution) at 7.52 per cent—surprising given that they have common ownership and presumably similar debt management strategies. Overall, the data appears unreliable, and should not be used to support strong policy conclusions.

Could such a bias persist?

Regardless of whether the evidence presented by the Commission indicates that the regulatory WACC may have exceeded the actual WACC in the current period, the more fundamental question is whether it would be rational for an investor to believe that such a bias can be expected to persist. For the overspend incentive to exist, we have shown in Section 2.1.2 that such an upwards bias must reliably persist for the remaining economic life of the asset.

There is little about the framework and process by which WACC parameters are set that would lead an NSP to believe that there could be a sustained upward bias—a bias in the order of 100 basis points in real terms—that would be sustained despite changing inflation and conditions in the financial markets and over a long series of five yearly resets by the AER.

Individual WACC parameters for the NSPs are set by the AER at the beginning of each regulatory period based largely on the current financial market conditions—particularly the risk free rate and the debt margin. This process is uncertain, as observations from the financial market suffer from many imperfections and thus selecting parameters requires a high degree of regulatory judgement by the AER. While the probability of regulatory error is material, such errors are far more likely to be randomly distributed than exhibit a systematic upward bias. A reasonable belief for an NSP is that these errors will be equally weighted so that in the long run the correct value is achieved on average.

The detail of the calculation of WACC parameters is contained in the National Electricity Rules, which can be changed by the AEMC if the proposed changes meet the appropriate rule making test. The test is that the changes will or are likely to contribute to the achievement of the NEO: the long run interests of consumers. A systematic upwards bias in the WACC is clearly not in the long run interest of consumers.

The fact that the AEMC is currently finalising a rule change in regard to the framework for the setting of the WACC shows that reliance by an NSP on both long term stability and upward bias is not credible. Yet our analysis has shown that the incentive to overspend claimed by the Commission relies on just such a belief.

The new rules change the detail of the WACC calculation from the current—relatively prescriptive—approach to a more holistic approach with a greater discretion for the AER through application of high level principles.

This more principled approach gives greater freedom to the AER rather than it getting bogged down in arcane detail such as which bonds are in a sample for the debt premium and should an average be calculated by an arithmetic rather than geometric mean.

This means that even if the Commission contention that the current NER has resulted in a systemic upward bias sufficient to incentivise inefficient overspending is correct, the NER changes should eliminate that incentive. This illustrates that it would be highly risky for a NSP to rely on a long run bias to make inefficient overspending profit maximising.

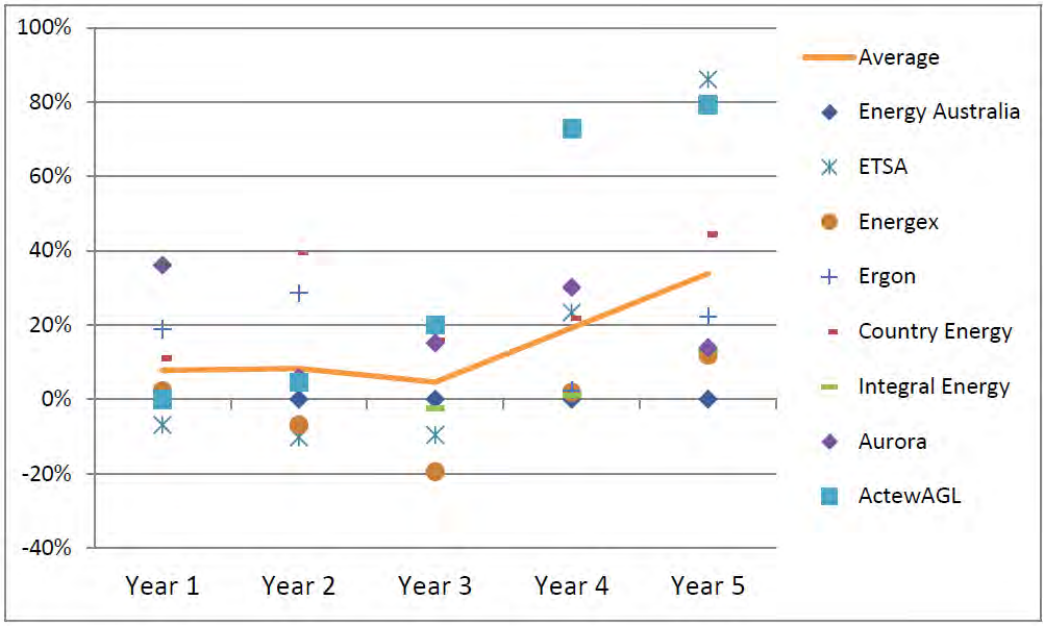
Conclusion

A long run systematic bias is implausible and there is little evidence to suggest it has been the case in the past. Further, the changes to the calculation of WACC show that an assumption that any bias will endure is not credible.

2.2.2 Has inefficient overspending occurred?

The Commission's empirical evidence that inefficient overspending is occurring relies on an analysis of the trend of overspending shown in their Figure 5.2—reproduced as Figure 2.5 below.

Figure 2.5: Overspending tends to increase later in the regulatory period



Source: Electricity Networks Regulatory Frameworks Draft Report, Productivity Commission, October 2012, Figure 5.2, pp194; Note: ETSA is now called SA Power Networks

The data does show a clear trend for capital overspending to increase later in the regulatory period. However, the Commission analysis focuses largely on the end of the regulatory period and this is unhelpful as it does not consider the overall nature of under- and over-spending over the full regulatory cycle. Further the Commission analysis did not explore alternate explanations for the overspending trend.

We have undertaken a more detailed analysis of the expenditure trends of distribution and transmission NSPs.

In our analysis we have looked at two key factors:

- The extent to which the trend of overspending in Year 5 of the regulatory period reflected the overspending trend in earlier years; and
- The extent to which the NSP's total expenditure over the full regulatory period was in line with the total regulatory allowance.

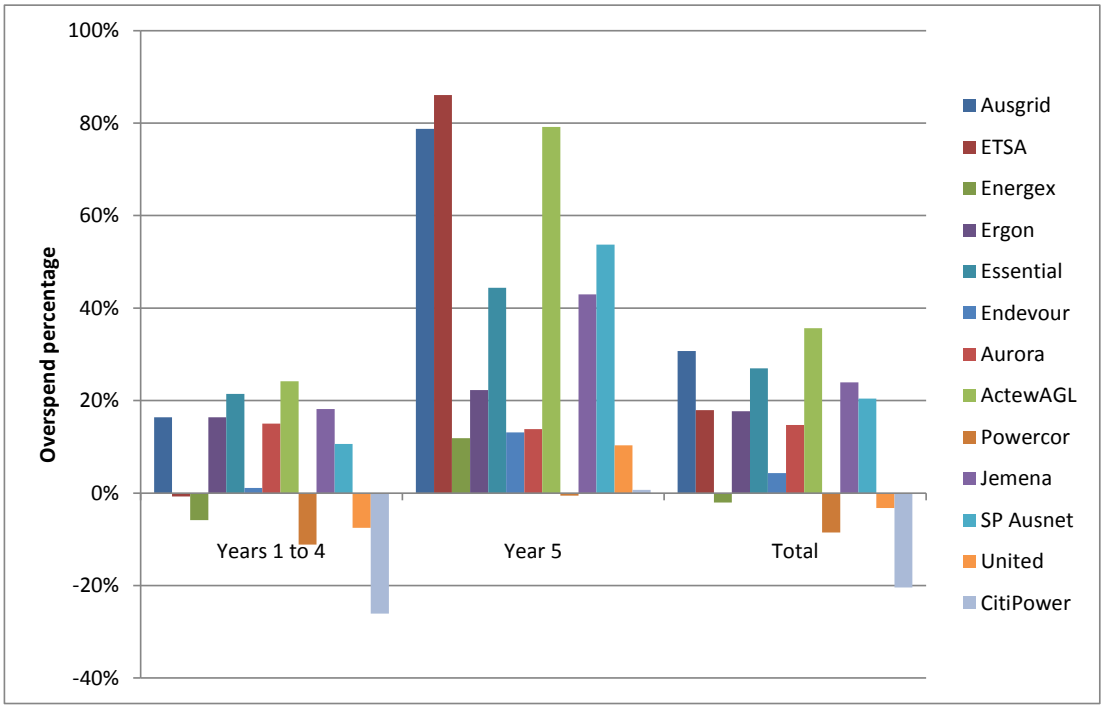
For this analysis we have used the distribution businesses shown by the Commission in their Figure 5.2, plus the five Victorian distribution businesses for the 2006 to 2010 period.

The Commission omitted these businesses on the basis of *"the capex efficiency carryover mechanism that applied at this time"*.[5] This is incorrect as the efficiency carryover mechanism only applied to operating expenditure during that period. An efficiency carryover mechanism for capital expenditure did apply to the Victorian distribution businesses in the 2001 to 2005 period. We note that capital expenditure for these Victorian businesses in aggregate was 18 per cent below regulatory allowances during 2001 to 2005 period compared to a slight overspend of around 1 per cent in the 2006 to 2010 period.

We have also included the five transmission NSPs.

The results of our analysis are shown in Figure 2.6 for distribution NSPs and in Figure 2.7 for the transmission NSPs.

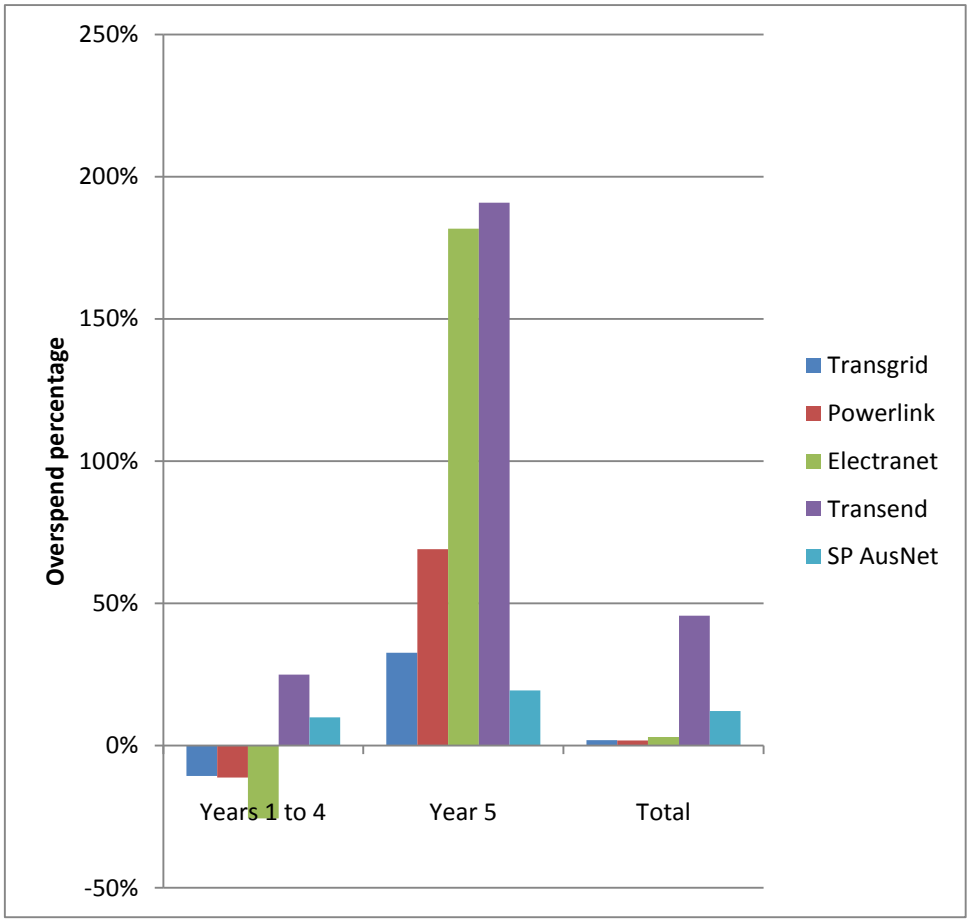
Figure 2.6: Analysis of overspending trends—distribution NSPs



Source: Castalia from AER determinations, comparative performance reports and NSP regulatory proposals

[5] From footnote of Commission's Figure 5.2

Figure 2.7: Analysis of overspending trends—transmission NSPs



Source: Castalia from AER determinations and the NSP regulatory proposals

The results of our analysis show that while all bar one of the seventeen NSPs overspent in Year 5, not all overspent over the full regulatory period. In this regard NSPs—both transmission and distribution—fall into two distinct categories:

- **"No overall overspend"**. In this category, while the NSPs all overspent in Year 5, over the entire regulatory period their total capital expenditure was close to or below the regulatory allowance. NSPs in this category are Transgrid, Powerlink, Electranet, Energex, Endeavour, CitiPower and United; and
- **"Material overall overspend**". In this category the overspending in Year 5 was a continuation of a trend to overspend in the earlier years with the result that the total capital expenditure over the regulatory period was materially above the regulatory allowance. NSPs in this category are Transend, SPAusnet, Ausgrid, Ergon, Essential, Aurora, ActewAGL, Jemena and SP Ausnet.

SA Power Networs and Powercor were the only NSPs that did not fit easily into either category. SA Power Networks underspent slightly in the early years of the regulatory period with significant overspending in Year 5 resulting in total spending being materially higher than the regulatory allowance. Powercor underspent in all years.

In regard to the **"No overall overspend"** category, it cannot be said that the overspending in Year 5 is evidence of inefficient expenditure. In fact, the contrary is true

as the NSPs have spent no more than the regulatory allowance amount over the full five year period. Since the allowance was the *ex ante* assessment by the AER of the level of efficient capital expenditure, spending of this amount over the period isn't inefficient. There is no doubt that the profile of expenditure across the period differed from the forecast. This difference is likely a combination of delays in initiating projects and of course the financial incentive to delay expenditure as late as possible in the regulatory period.

In regard to the **"Material overspend"** category, it seems unlikely that a NSP that—for whatever reason—has materially overspent against the regulatory allowances in the early years of the regulatory period would continue to do so in Year 5 to gain some theoretical advantage. It is much more likely that the overall overspend is a result of a combination of material variations to expenditure and demand forecasts and/or an inadequate regulatory allowance. This is because there is clearly no incentive to overspend in the earlier years. Further, the pattern of increasing overspend in Year 5 is consistent with the incentive of a NSP to delay necessary overspending until as late as possible in the period.

This alternative analysis and explanation of the overspend trend is supported by the different patterns of overspending between transmission and distribution NSPs:

- Most transmission NSPs fell into the **"No overall overspend"** category; and
- More than half of the distribution NSPs fell into the **"Material overspend"** category.

This is logical as transmission capital expenditure is concentrated on a small number of large projects with long lead times whereas distribution expenditure is a large number of small projects with short lead times. Inherently forecasting transmission expenditure is likely to be less prone to error. Distribution expenditure is also much more susceptible to demand growth at a local level which is much more volatile and difficult to forecast up to six or seven years in advance. The large number of individual distribution assets and asset classes also makes the forecasting of optimum condition based replacement more challenging.

Transmission NSPs have also always had the added incentive of actual depreciation being applied in the RAB roll-forward.[6] This increases the benefit of efficient under spending and decreases the incentive to inefficiently overspend.

Further support for the position that it is forecast errors in setting the ex-ante allowance that is a more logical explanation for Year 5 over expenditure comes from:

- the average overspend for transmission NSPs is only 5 per cent compared to 12 per cent for distribution NSPs—expected as forecasting distribution capital expenditure is more problematic than transmission capital expenditure; and
- The "spread" of over expenditure increases later in the regulatory period as shown in Figure 2.5. Again this is entirely expected as forecast errors would tend to increase in later years of the period.

Interestingly, the split between the two categories of NSP does not conform to differences in ownership. Both government owned and private sector NSPs are represented in both categories. However, around two thirds of government owned NSPs overspent in total across the period, compared to only half the privately owned NSPs.

[6] NER S6A.2.1(f)(5)

Summary

Further analysis of the Commission's evidence for inefficient overspending—the trend for overspending to increase in Year 5 of the regulatory period—reveals alternative and more credible explanations revolving around:

- The incentive for businesses that can live within the overall regulatory allowance to re-profile efficient expenditure such that they underspend in early years and overspend in the last year; and
- Overspending in the last year being a continuation of a consistent trend to overspend in all years and overall as a result of forecasting errors and or an inadequate regulatory allowance.

3 The Effect of the Recommendations

In this section we look at the likely effects that the Commission's recommendation—if implemented in full—would have on the approach of a profit maximising NSP to its capital expenditure decisions.

The Commission's package of three recommendations that we examine are:

- The introduction of an EBSS for capital expenditure
- Changes to the process for calculating WACC parameters; and
- An *ex post* prudency review where capital expenditure materially exceeds the ex-ante allowance over the regulatory period.

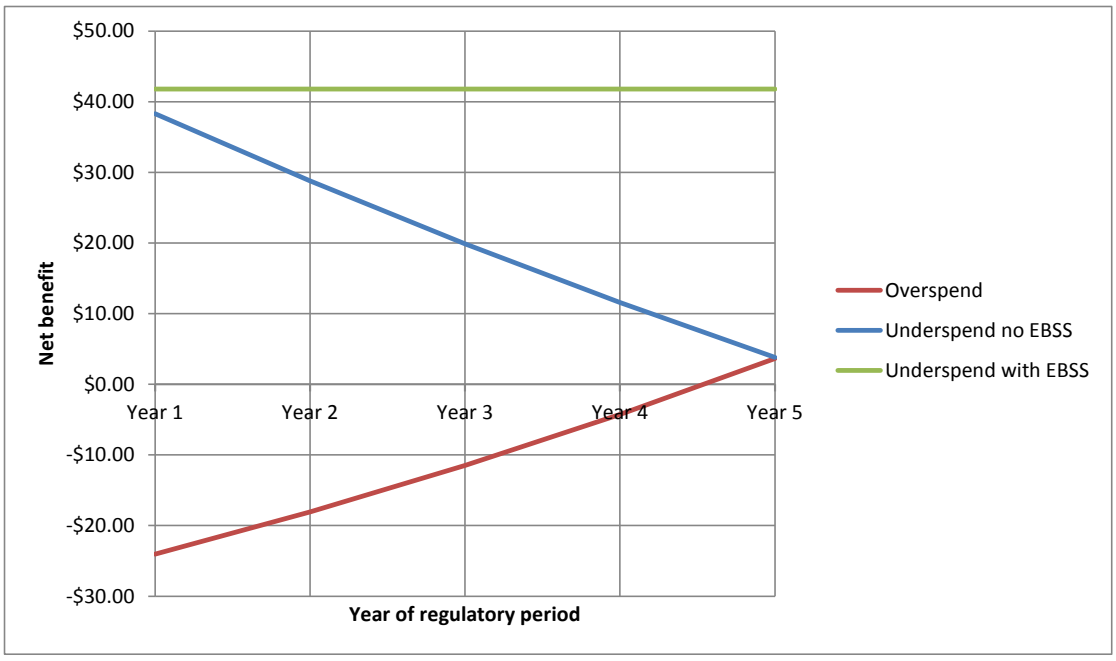
3.1 Effect of an EBSS

The Commission recommends the implementation of an efficiency benefit sharing scheme (EBSS) for capital expenditure on the basis that it would provide more constant incentives for NSPs to reduce spending throughout the regulatory period.

We concur with this recommendation. An EBSS for capital expenditure would have no impact on the inefficient overspend incentives discussed in Section 2.1.2 as neither the theoretical benefits of inefficient over expenditure nor the penalty would be directly impacted.

However—and most importantly—what would change is that the introduction of an EBSS would ensure that the efficient incentive to underspend in each year of the period would be at the same level. This incentive would not decline during the period as it does in the current framework. We show this in Figure 3.1.

Figure 3.1: Impact of EBSS on incentives to under or over spend



Without an EBSS, the incentive to underspend declines during the regulatory period. By the end of year five (although not over the last year on average) the incentive to underspend is about the same as the theoretical incentive to overspend inefficiently. That means that without an EBSS, a profit maximising NSP would be indifferent to either

under- or overspending right at the end of the regulatory period. However, for a profit maximising NSP under an EBSS, the constant incentive to efficiently underspend is an order of magnitude higher than the incentive to overspend in the last year of the regulatory period and would completely outweigh the theoretical incentive to overspend.

The profit maximising position would thus be to underspend the overall regulatory allowance—but not by so much as to cause regulatory suspicion of future capital expenditure forecasts—and to profile expenditure so that the early years are underspent to the maximum extent possible while maintaining service and reliability standards (any possible deferral of capital expenditure towards the end of the regulatory period is profit maximising, with or without an EBSS).

To the extent that it was necessary for an NSP to overspend the regulatory capital allowance to meet service standards, reliability or license conditions, an EBSS would incentivise essentially the same behaviours as the current framework—that is to delay any necessary efficient over expenditure to as late in the regulatory period as possible.

3.2 The impact of changes to the WACC process

The Commission has recommended a number of changes to the way in which the AER is required to estimate WACC parameters. They are:

> *The National Electricity Rules should specify the interdependent nature of the parameters used to estimate the weighted average cost of capital, and specify that any merits review must also consider the relevant rule in that light. Recommendation 5.2*
>
> *Estimates of the debt risk premium and risk free rate used in the calculation of the weighted average cost of capital should be calculated using long-term trailing averages. Recommendation 5.3*

The AEMC's changes to the NER as flagged in their Final Position paper are broadly in line with the Commission's recommendations. In regard to WACC, the AEMC has adopted a less prescriptive approach, stating:

> … *the Commission* (the AEMC) *has provided high-level principles to guide the estimation and left the judgement as to the best approach to the regulator to make, consistent with achieving the overall allowed rate of return objective. This involves the regulator making judgements about methodologies, analytical techniques and evidence to use to make the estimate of the rate of return.*

And

> *the Commission* (the AEMC) *has found that the estimation of the return on debt component can be improved by allowing consideration of alternative ways of determining the efficient debt servicing costs of electricity network service providers*

While the detail of the AEMC changes differs from the Commission recommendation, we suggest they will achieve broadly the same effect.

In any event, even the fact that the process by which the AER is required to set WACC parameters is in the NER and can be changed—and has changed—would be sufficient to ensure that any profit maximising NSP would not assume a systemic long run upward bias in the regulatory WACC as a basis for making capital expenditure decisions.

3.3 The effect of an *ex post* prudency review

As part of a package of measures to eliminate the claimed incentive to overspend towards the end of the regulatory period, the Commission recommends that there be an

ex post prudency review of all capital expenditure where the actual capital expenditure is materially more than the regulatory allowance. The maximum disallowable expenditure would be limited to the difference between the ex-ante regulatory allowance and the actual expenditure.

Such an *ex post* review will involve increased risk for NSPs. The risk will arise partly from the risk of overspending and partly from the risk of regulatory error.

The risk of overspending arises because a NSP cannot be completely certain that it will not materially overspend the regulatory allowance—there is always the possibility of unforeseen events late in the regulatory period that can lead to an unanticipated increase in costs. The incentive, therefore, on NSPs will be to ensure that they have a cautious approach to expenditure and aim to undershoot the regulatory allowance—that is they will try to maintain a safety margin. This caution may result in lower expenditure that will benefit customers, but equally it may see necessary expenditure being curtailed at the end of the regulatory period with potential impacts on reliability and service standards.

However, to the extent that it was necessary for an NSP to overspend materially, the regulatory capital allowance to meet service standards, reliability or license conditions, the threat of an *ex post* review would incentivise a profit maximising NSP to avoid—at almost all costs—the need to overspend. This is because the over expenditure—even if it was efficient—would trigger an *ex post* review of prudency that would risk the quantum of that expenditure being disallowed by the AER on the basis that other expenditure wasn't prudent. The efficient over expenditure would trigger a review of the prudency of the entire capital expenditure over the period.

Even for an efficient and well managed NSP this would be a material and significant risk with a high probability of regulatory error resulting in some disallowed expenditure.

The risk of regulatory error arises from two sources:

- As a result of the complexity of the *ex post* review process itself. In such a review, there will always be the potential for legitimate disagreement between the AER and the NSP on the prudency of certain expenditure; and
- Any error that results in the regulatory allowance being inadequate in the first instance. An inadequate allowance will increase the risk that an NSP will need to materially—but efficiently—overspend and thus trigger an *ex post* review.

If some part of the total actual capital expenditure is deemed by the AER not to be prudent, the result will be the permanent loss of that expenditure. This is an order of magnitude greater than the current penalty for over expenditure—the temporary loss of return on and of capital.

As a result, the likely response to the threat of an *ex post* review by a profit maximising NSP will be twofold:

- Ensure that the regulatory capital allowance is maximised by use of overly conservative forecasts and assumptions in regulatory proposals; and
- Ensure—at all costs—that expenditure is contained within the regulatory allowance—even at the expense of service standards, reliability and long term efficiency.

4 *Ex post* Reviews as Part of the Package

The Commission acknowledges that *ex post* reviews are problematic, but sees them as a "safety net" if expenditure levels are not being well controlled by the incentive structure.

We have shown that at best the incentive to overspend inefficiently is only a theoretical possibility based on implausible assumptions and that an EBSS and changes to the WACC process will eliminate any remaining probability of such an incentive. In these circumstances, the question is whether the marginal benefit of adding an *ex post* review to the overall incentive package exceeds its cost.

Our analysis in the previous section shows that the marginal benefit of *ex post* reviews in terms of reducing the hypothetical incentive to over-spend is likely to be negligible, while the additional risks from undermining the incentive for investment are more likely to be material. In addition, the practical challenges of implementing *ex post* reviews are likely to add to the overall detriment from such reviews. On balance, it appears very likely that the social costs of *ex post* reviews would exceed their benefits. Moreover, to the extent that *ex post* reviews increase risk, the need to maintain an incentive to invest may require an increase in allowed returns to NSPs.

As the Commission acknowledges, *ex post* reviews are inherently difficult. The review would have to assess all capital expenditure over the full five year period for prudency. The prudency test would be on the basis of the actions of a prudent and efficient network operator would take—but only on the basis of information that would reasonably be available at the time of those actions.

This of course is quite subjective and the reviewer cannot help but be influenced by the knowledge of what has actually occurred since the decision. Thus, reviewing a project that was justified on the basis of a forecast of a material increase in demand will be difficult to undertake objectively if subsequent events showed that the demand increase did not materialise.

The ACCC has previously rejected *ex post* reviews.

Prior to 2006, transmission NSPs in the NEM were regulated by the ACCC, initially on the basis of a regulatory framework that included *ex post* optimisation of capital expenditure before it was added to the RAB. In 2005, the ACCC—on its own initiative—rejected the *ex post* approach and moved to an *ex ante* cap that was very similar to the current framework. They did so on the basis that:

> *The potential for ex post optimisation of investments creates investment uncertainty for TNSPs.*

And further they stated:

> *In response to* ***these shortcomings in the ex post regime*** (our emphasis)*, the ACCC decided to implement a new approach to transmission investment regulation through the introduction of a firm ex ante investment allowance for TNSPs, determined at the commencement of a TNSP's revenue reset.* [7]

Pre-approval of expenditure is problematic

The Commission suggests that if it becomes clear during the regulatory period that a NSP will exceed the regulatory capital allowance, the NSP should be able to apply to the AER for pre-approval of capital expenditure to avoid the *ex post* review.

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[7] *Final Decision NSW and ACT Transmission Network Revenue Cap TransGrid 2004–05 to 2008–09,* ACCC, April 2005

While this is a well-intentioned proposal, it creates an essentially unworkable scenario for both the NSP and the AER.

This is because at any point in the regulatory period, it will be difficult for the NSP to be reasonably certain that total future expenditure can be contained within the overall allowance, particularly if expenditure in the early part of the period has already exceeded the annual allowance. Thus the NSP might apply to the AER before expenditure is committed for approval—and of course that approval will require AER examination of the entire expenditure, not just the project or projects that the NSP has nominated as being the cause of the over expenditure.

This potentially could become a complex and intrusive annual process of applying for pre-approval of the entire capital expenditure program. For distribution businesses in particular given that their expenditure is an accumulation of many small projects it would be unworkable, involving disproportionate time and effort. It would also amount to the AER micro-managing the business, which is contrary to the intention and philosophy of incentive regulation.

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