

Response to the Australian Energy Regulator consultation paper on Form of Regulation

May 2012



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Contents

1	EXECUTIVE SUMMARY.....	1
2	INTRODUCTION.....	3
	2.1 Structure of this submission.....	3
3	ASSESSMENT CRITERIA AND EVALUATION FRAMEWORK.....	4
	3.1 Proposed Evaluation Framework.....	4
	3.2 Ausgrid's assessment of the relevance and importance of the AER assessment criteria.....	5
	3.2.1 Incentives to set efficient prices.....	5
	3.2.2 Incentives for demand management.....	5
	3.2.3 The allocation of forecast volume risk.....	6
	3.2.4 Applying a ceiling on revenue recovery.....	6
	3.2.5 Consistency of Regulatory Arrangements.....	6
	3.2.6 Price Flexibility.....	7
	3.2.7 Price Stability.....	7
	3.2.8 Administration costs.....	7
4	INCENTIVES FOR DNSP TO SET EFFICIENT PRICES.....	9
	4.1 Economic Theory of the WAPC.....	9
	4.2 Is Ausgrid's pricing behaviour under the WAPC consistent with theory?.....	10
	4.2.1 Ausgrid's Volume Environment and Commercial Risk Exposure under the WAPC.....	10
	4.2.2 Summary of Network Tariff Strategy.....	11
	4.2.3 Economic Implications of Ausgrid's network tariff reforms during the current regulatory period.....	13
5	VOLUME RISK AND REVENUE RECOVERY.....	15
	5.1 Recovery of efficient costs.....	15
	5.2 Optimal allocation of volume risk between parties.....	15
	5.2.1 Windfall gain/losses.....	15
6	INCENTIVES FOR DNSP TO UNDERTAKE EFFICIENT DEMAND MANAGEMENT.....	18
7	PRICE FLEXIBILITY AND STABILITY.....	20
8	ADMINISTRATION COST.....	21
9	CONSISTENCY OF REGULATORY ARRANGEMENTS.....	22
10	CONCLUSIONS.....	23

1 Executive Summary

The Australian Energy Regulator (AER) is required under the National Electricity Rules (NER) to publish a framework and approach paper ahead of every distribution determination. The framework and approach paper addresses a range of issues, including the control mechanism to apply to standard control services. A control mechanism determines how the prices or revenues of a DNSP will be regulated (controlled) over the regulatory period.

The AER released a discussion paper on 4 April 2012 that provides interested stakeholders with their initial preference to adopt a revenue cap for standard control distribution electricity services in the next regulatory period. The discussion paper also provides an understanding of the approach taken by the AER to evaluate the different forms of control mechanism. The AER seeks comment from interested stakeholders on the questions raised in the discussion paper. This submission forms the basis of Ausgrid's response to the AER discussion paper.

The approach proposed by the AER to evaluate the different forms of control mechanism needs to change. As noted by the Productivity Commission and the Organisation for Economic Cooperation and Development (OECD) the inclusion of multiple objectives gives rise to inherent conflicts, inconsistency and promotes a lack of transparency.¹ These concerns are clearly evident in the proposed approach outlined in the discussion paper as it is difficult for Ausgrid and the other stakeholders to understand the underlying rationale for the AER's initial preference for a revenue cap given the information contained in the discussion paper. To remedy these concerns, Ausgrid proposes that the AER revise its evaluation approach by adopting the National Electricity Objective (NEO) as a single over-arching objective and assessing the matters to which it must have regard in the context of the proposed control mechanism and its likely contribution to the achievement of the NEO. In addition, the AER must take into account the revenue and pricing principles given that the decision regarding the appropriate control mechanism is an exercise of discretion in the making of a distribution determination relating to direct control network services.

The discussion paper implies that there is a need to trade-off pricing efficiency and demand side management, in the sense that control mechanisms that provide incentives for efficiently pricing network services are biased against demand management and vice versa. This is a narrow view that does not take into account the role of efficient pricing and incentives under Part C of the NER. The AER has not taken into account the fact that incentives under the WAPC to improve the efficiency of network prices will encourage customers to change their network usage patterns where economically desirable to do so. This provides clear feedback signals to DNSPs on where demand side management is likely to be a lower cost option than investing in the network. In this respect, the WAPC can be seen as powerful regulatory instrument to ensure that consumers play an important role in delivering efficient demand management outcomes, rather than simply relying on the DNSP to initiate demand management. The AER also appears to ignore other incentives within the regulatory arrangements when making this evaluation.

Ausgrid strongly believes that DNSPs should be provided commercial incentives to undertake demand side management where it is expected to be in the long term interests of electricity users. The revenue cap is not the appropriate mechanism to provide these incentives because it promotes DNSPs to pursue demand management opportunities at the expense of undermining consumer driven efforts to manage their own network usage patterns by encouraging DNSPs to move away from efficient prices. A more sensible approach is to develop a separate mechanism or suite of mechanisms under the WAPC that provides the DNSPs with well targeted incentives to pursue demand management opportunities that are expected to be in the long-term interests of

¹ Productivity Commission 2004, p.162 and Organisation for Economic Cooperation and Development, (OECD), 'The objectives of competition law and policy' (2003) OECD Journal of Competition Law and Policy, vol 5, no. 1, pp.8-29 at p.9.

electricity users. It is for this reason that demand management incentives should not be used as an assessment criteria in the evaluation of control mechanisms.

The economic arguments in favour of a WAPC over a revenue cap are overwhelming in the case of distribution network services. As noted by the AEMC, DNSPs have superior incentives under a price cap to set efficient prices compared to other forms of control mechanism. This is because the price structure that the DNSP sets will affect the variability of its network revenue. Therefore to minimise its risk, there is a tendency for DNSPs to set prices such that revenues align with costs.² The key issue is whether DNSPs respond appropriately to the incentives under the WAPC. In this regard, the WAPC has been an outstanding success because the exposure to commercial risk under the WAPC has forced Ausgrid and the other NSW DNSPs to gradually move away from traditional pricing philosophies based on the arbitrary allocation of historical costs towards sophisticated pricing approaches consistent with economic principles and supported by complicated data and analytical systems, customer-focused research initiatives. The increased commercial importance of the pricing function under the WAPC has led to the gradual integration of efficient pricing in the corporate strategy of many of these network businesses. The imposition of a revenue cap in the next regulatory period will result in the loss of this expertise from the industry with end-customers forced to bear the consequence in the form of higher price volatility.

The increased exposure to commercial risk under the WAPC due to the unprecedented uncertainty in our current volume environment has forced Ausgrid and the other NSW DNSPs to seriously investigate how to improve the cost reflectivity of their network tariffs. Ausgrid is at the forefront of tariff reform in Australia as evident from our commitment to replacing accumulation meters with Type 5 interval meters, which is expected to result in over half a million residential and small business customers being assigned to a more cost reflective Time of Use Tariff at the network level by the end of the current regulatory period. The imposition of a revenue cap will remove the incentives for DNSP to undertake tariff reform, which is clearly contrary to the long-term interests of electricity users.

In summary, Ausgrid believes there are overwhelming reasons for NSW DNSPs to remain under a WAPC for distribution network services. The WAPC has played a critical role in encouraging Ausgrid and the other NSW DNSPs to undertake important reforms to their network tariffs and to devote considerable resources to investigating innovative long-term pricing solutions. It is clear that the commitment to efficient pricing under the WAPC has clearly enhanced economic welfare, particularly in the current volume environment where end-customers appear to have become more responsive to price signals. Imposing a revenue cap on NSW DNSPs for standard control electricity distribution services in the next regulatory period will remove the commercial incentive on DNSPs to pursue tariff reform by transferring the volume risk to end-customers that are not as well placed to manage these risks. This transfer of risk coupled with the poor incentives under the revenue cap is likely to have adverse economic and social welfare implications, particularly in the current uncertain volume environment.

² AEMC 2009, Stage 2: Final Report Review of Demand-Side Participation in the National Electricity Market, DSP1, November, p. 93

2 Introduction

On 4 April 2012, the Australian Energy Regulator (AER) published a discussion paper on matters relevant to the framework and approach paper ACT and NSW DNSPs 2014 -2019 – Control mechanisms for standard control electricity distribution services in the ACT and NSW (Discussion Paper).

Ausgrid's approach to this submission is to focus on providing the AER and other stakeholders with our view on the most appropriate approach to evaluating the different forms of control mechanism and the underlying rationale for our strong preference to remain under a WAPC for our standard control distribution services. Ausgrid has also provided comprehensive responses to the specific questions and issues raised by the AER in its discussion paper.

Ausgrid would be happy to meet with the AER to discuss any aspect of our submission in more detail.

2.1 Structure of this submission

Our submission is structured to provide a comprehensive response to the AER's specific question raised in its discussion paper and to provide a detailed understanding of our underlying rationale for supporting the existing regulatory arrangements. The structure of the submission is summarised below:

- Executive Summary
- Introduction
- Assessment Criteria and Evaluation Framework
- Incentives for DNSPs to set Efficient Prices
- Volume Risk and Revenue Recovery
- Incentives for DNSP to undertake Efficient Demand Management
- Price Flexibility and Stability
- Administration Costs
- Consistency of regulatory arrangements
- Conclusions
- Appendices

3 Assessment Criteria and Evaluation Framework

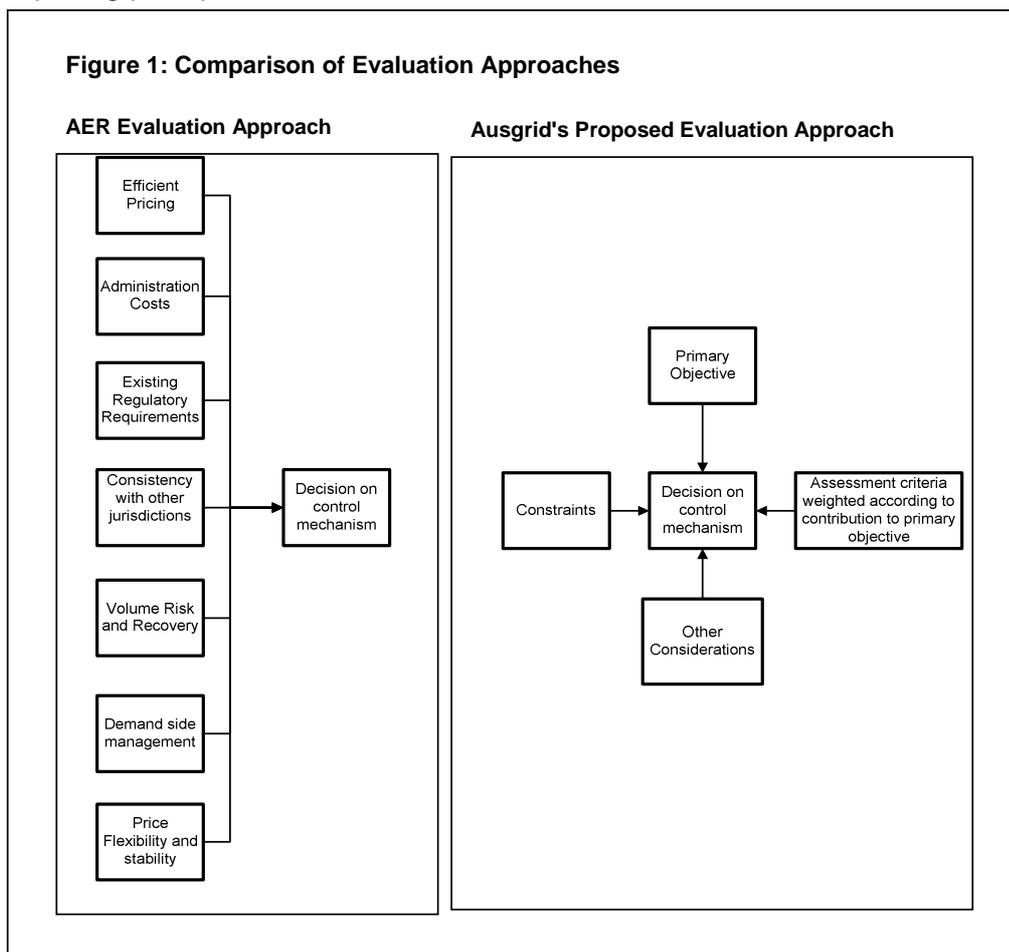
Question 1

- A. What weighting or ranking should be applied to the assessment criteria listed in Clause 6.2.5(c) of the NER and the additional criteria considered by the AER?**
- B. Are there any other criteria that the AER should consider in determining the control mechanism to apply to standard control services? How important are these other criteria?**

The AER should reconsider its approach to evaluating the different forms of control mechanism that could apply in the next regulatory period. As noted by the Productivity Commission and the Organisation for Economic Cooperation and Development (OECD) the inclusion of multiple objectives gives rise to inherent conflicts, inconsistency and promotes a lack of transparency.³ These concerns are clearly evident in the discussion paper as it is difficult for Ausgrid and the other stakeholders to understand the underlying rationale for the AER’s initial preference for a revenue cap given the information contained in the discussion paper.

3.1 Proposed Evaluation Framework

To remedy our concerns over transparency and consistency, Ausgrid proposes that the AER revise its evaluation approach by incorporating an assessment of the extent to which a control mechanism is likely to contribute to the achievement of the NEO as well as the application of the revenue and pricing principles, as illustrated below.



³ Productivity Commission 2004, p.162 and Organisation for Economic Cooperation and Development, (OECD), 'The objectives of competition law and policy' (2003) OECD Journal of Competition Law and Policy, vol 5, no. 1, pp.8–29 at p.9.

Ausgrid's proposed evaluation approach will ensure that the assessment criteria used in the evaluation process can be weighted according to their expected contribution to the achievement of the NEO-related primary outcome. In the interests of transparency, the AER should also make it clear what constraints and other considerations play a role in the evaluation process and their economic justification for their inclusion in the evaluation process.

Ausgrid believes that the over-arching objective in our proposed evaluation approach should be the National Electricity Objective (NEO) as the form of control mechanism recommended by the AER must above all other considerations be expected to promote the efficient investment in, and efficient operation and use of electricity services for the long-term interests of consumers of electricity.

3.2 Ausgrid's assessment of the relevance and importance of the AER assessment criteria

Please note the following assessment of the relative importance and completeness of the assessment criteria proposed in the discussion paper should be considered in the context of our response to Question 1.

3.2.1 Incentives to set efficient prices

Ausgrid believes that this assessment criteria should be given the most weight in the evaluation process because the efficient pricing of network services is of paramount importance to the achievement of the NEO.⁴ In other words the NEO can only be achieved if the following network pricing outcomes are realised:

- The price signals conveyed to network customers are reflective of the Long-Run Marginal Cost of supplying additional network capacity, as required under Clause 6.18.5(b)(1) of the NER.
- The DNSP recovers their substantial sunk costs in a manner that has the least impact on the current and future level of network use, as required under Clause 6.18.5(c) of the NER.

We agree with the AER that the control mechanism should provide an incentive for DNSPs to set efficient prices. This view is also strongly supported by the AEMC.⁵ Providing these incentives to DNSPs through the control mechanism is consistent with the NEO because it represents the lowest cost approach to achieving efficient pricing outcomes given that DNSPs are the only party with the expertise and knowledge to price in this manner. If the control mechanism does not provide these incentives, such as in the case of a revenue cap, the AER would need to adopt a more intrusive approach to the enforcement of the pricing principles in the NER. This view is also supported by the AEMC.⁶ The costs incurred by the AER to develop its own pricing and forecasting expertise are likely to be prohibitive and largely counter-productive in light of the challenge of pricing network services in an environment of unprecedented uncertainty in terms of volumes and economic costs.

3.2.2 Incentives for demand management

Ausgrid strongly believes that DNSPs should be provided incentives to undertake demand management where it is expected to be in the long term interests of electricity users. While this assessment criteria is clearly relevant to the NEO, Ausgrid wishes to point out the design of appropriate demand management incentives is largely a separate issue to be addressed in a broader regulatory context. The first issue for the AER to decide is the economically desirable level of incentive to provide DNSPs. The second issue is to decide the optimal mechanism or suite of mechanisms to deliver this incentive to DNSPs. Ausgrid sees no logical reason why the choice of

⁴ This is also a view shared by the AEMC. Refer to AEMC 2012 Directions Paper – Power of Choice – giving consumers options in the way they use electricity, March, p.54.

⁵ AER 2012, Matters relevant to the framework and approach, ACT and NSW DNSPs 2014-2019, Control mechanisms for standard control electricity distribution services in the ACT and NSW, Discussion Paper, April, P.6

⁶ AEMC 2009, Stage 2: Final Report Review of Demand-Side Participation in the National Electricity Market, DSP1, November p.17

control mechanism will undermine the achievement of efficient demand side management outcomes as long as the AER has determined the appropriate level and mechanism to deliver the incentives to DNSPs. It is also relevant to note that the AEMC have expressed economic concerns about the revenue cap encouraging inefficient demand management outcomes.⁷ It is for this reason that Ausgrid has applied a low ranking of importance to this assessment criteria in the evaluation of the different forms of control mechanism, but strongly believes that this issue should be given a high importance in a broader regulatory context. Any assessment of the control mechanism against this factor should not be in isolation of these broader incentive arrangements across the regulatory framework.

3.2.3 The allocation of forecast volume risk

The various forms of control mechanism allocate forecast volume risk differently between the DNSP and their consumers. This is relevant to the NEO and should be given a significant weight and a high ranking of importance in the evaluation of different control mechanisms. This is because the extent to which the DNSPs are exposed to the commercial risk arising from unanticipated changes in volumes influences the level of commercial incentive to improve the cost reflectivity of network tariffs from an economic perspective. In other words, the higher the DNSP's exposure to commercial risk under a control mechanism, the higher the likelihood that the DNSP will undertake economically desirable reforms to network tariffs.

3.2.4 Applying a ceiling on revenue recovery

The AER states in their discussion paper that a control mechanism should provide DNSPs with an opportunity to recover efficient costs⁸, while limiting the revenue recovery above the AER revenue requirement.⁹ This appears to be an "all stick, no carrot" approach to incentive regulation which is neither consistent with the NEO or the revenue and pricing principles. Ausgrid believes that placing a ceiling on allowed revenue recovery, rather than a limit on prices, is not consistent with the NEO unless the AER can demonstrate that allowing DNSPs to receive a share of the economic benefit from undertaking tariff reforms is not in the long-term interests of electricity users. Given the enormity of available estimates of the value of the economic benefits to be realised from tariff reform¹⁰, Ausgrid believes that it reasonable to form the view that these financial incentives are completely justified on economic grounds, particularly in the current environment of unprecedented uncertainty and increasing price responsiveness of customers. For this reason, Ausgrid believes that this assessment criteria should be given a low weighting of importance in the AER's evaluation of the different forms of control mechanisms.

3.2.5 Consistency of Regulatory Arrangements

Consistency of regulatory arrangements is a desirable outcome from an economic perspective, particularly in the case of DNSPs, such as Ausgrid, that share their economic base with another DNSP. The economic consequences from applying different forms of control mechanism in this situation arise because of the differences in pricing incentives and the resultant investment and consumption distortions. For this reason, consistency in the control mechanism between DNSPs is an important assessment criteria. This is not to be construed to mean that differences in the control mechanism should not exist, but rather that the AER should justify any proposed inconsistencies on economic grounds i.e differences in regulatory arrangements are necessary to support the achievement of the NEO.

⁷ AEMC 2009, Stage 2: Final Report Review of Demand-Side Participation in the National Electricity Market, DSP1, November p.18 and Appendix B.

⁸ It is relevant to note that a DNSP earning actual revenues above the revenue requirement may simply reflect AER forecasting errors in respect to volumes and costs.

⁹ It is important to note that underlying concerns over the DNSP earning super normal profits are addressed through the broader regulatory process of calculating the X-factor constraint, rather than through the choice of control mechanism.

¹⁰ Charles River Associates 2003, Impact of Air Conditioning on Integral Energy's network, presentation to IPART PICG meeting.

3.2.6 Price Flexibility

As with the demand management incentive, Ausgrid believes that price flexibility is mainly an issue to be considered in a broader regulatory context. While price flexibility is relevant to the NEO because it is in the long-term interests of users to give DNSPs the flexibility to introduce innovative new tariffs and to re-structure and re-balance existing tariffs, Ausgrid believes that this is an issue that relates primarily to the level of the side constraint, rather than the choice of control mechanism. It is for this reason that a low weighting of importance should be assigned to this assessment criteria for the purpose of evaluating the different forms of control mechanism.

3.2.7 Price Stability

Ausgrid believes that this is an important issue for the AER to consider given that unexpected movements in prices can exacerbate adjustment costs of users and distort investment and consumption decisions. While it is efficient for the AER to allow network prices to vary over time in response to changes in volumes and costs, it is clearly the case that the imposition of a revenue cap in a uncertain volume environment could lead to unstable pricing outcomes that cannot be justified on economic grounds. It is for this reason that this criteria should be also given a significant weighting of importance in the AER's evaluation of the different forms of control mechanism.

3.2.8 Administration costs

The discussion paper argues that the control mechanism should minimise the complexity and administrative burden for the Regulator, DNSP and users. Ausgrid agrees with the AER on this point, but believes that these costs will be minimised by remaining under the WAPC given that this will avoid having to incur the costs of developing new internal processes and expertise to comply with a new control mechanism. There are also indirect transaction costs associated with a change in the form of control mechanism. Ausgrid believes that these implicit costs are significant and should be considered in the evaluation process. An example of an implicit cost from the implementation of a revenue cap is the need for the AER to take a heavy handed approach to the enforcement of the pricing principles given that DNSPs do not have a meaningful commercial incentive to price efficiently under the revenue cap. This heavy handed approach will require that the AER develop its own internal pricing and forecasting expertise and incur the on-going cost of keeping up to date on volume and cost developments across the NEM. Given the reduced commercial importance of the pricing function, DNSPs will no longer being able to justify the current level of resources devoted to the pricing and forecasting function, resulting in the loss of expertise in these areas. This is a substantial loss to DNSPs and the broader industry as it has taken almost a decade to develop this expertise under the WAPC. Ausgrid also wishes to point out that the WAPC has had a profound impact on the pricing culture of the NSW DNSPs. In the early years of the WAPC, the NSW DNSPs continued to rely heavily on traditional pricing approaches based on complex engineering models that allocated historical cost to individual tariffs and tariff components. The reluctance of NSW DNSPs to move away from traditional forms of pricing and integrate efficient pricing within their corporate strategy was identified by East Cape Pty Ltd in their 2002 report to IPART.¹¹ The NSW DNSPs and Ausgrid in particular have embraced efficient pricing during the current regulatory period. This transformation is a direct outcome of our exposure to a significant increase in commercial risk under the WAPC due to the unprecedented uncertainty in our energy consumption environment. It is for these reasons that Ausgrid believes that this criteria should be given a reasonable weighting of importance by the AER in their evaluation of the different forms of control mechanism.

¹¹ East Cape Pty Ltd 2002, Efficient Network Pricing and Demand Management, February, p.8, p.28

Table 1: Summary of Proposed Assessment Criteria and Justification

Assessment Criteria	Description	Proposed Weighting of Importance*	Justification
Incentives to price efficiently	Incentive of DNSP to set prices reflective of LRMC and to recover sunk costs in a non-distortionary manner	100	It is in the long-term interest of electricity users for DNSP to have the commercial incentive to price efficiently. The alternative of not providing these incentives (i.e heavy handed approach under revenue cap) is likely to be costly and largely counter-productive given dynamic and uncertain cost and volume environment
Demand Management Incentives	Incentive of DNSP to undertake efficient demand management.	<25	A low weighting of importance has been assigned to this criteria because this is an issue to be addressed in a broader regulatory context i.e an appropriate demand management incentive scheme.
Ceiling on revenue recovery	DNSP should not be allowed to earn more than the AER revenue requirement.	<25	A low weighting of importance has been assigned to this criteria because the avoidance of super normal profits is addressed in a broader regulatory context i.e setting of X-factors.*
Allocation of Volume Risk to DNSPs	The DNSP is exposed to the full volume risk under the WAPC, whereas under a revenue cap the customer is exposed to this risk.	100	The DNSP should be exposed to the full volume risk because the DNSP is the party best placed to manage this risk in the long-term interests of electricity users.
Pricing Flexibility	To limit the extent to which DNSP can re-balance their tariffs	<25	A low weighting of importance has been assigned to this criteria because the extent of price flexibility provided to DNSPs is addressed through the price limit mechanism, rather than control mechanism.#
Price Stability	Unanticipated movements in prices distorts investment and consumption decisions if not justified on economic grounds	50	This is relevant to the NEO, but should be considered in a broader regulatory context i.e the content of the pricing proposal and Statement of Expected Price Trends.
Administration Costs	A change in the control mechanism results in administration and other transaction costs being incurred by DNSP, AER and users.	25	It is relevant to the long-term interest of users that the AER consider the likely impact of a change in the control mechanism on administration and transaction costs.
Consistency in Regulatory Arrangements	Consistency in regulatory arrangements avoids unnecessary economic distortions to consumption and investment decisions of electricity users	25	It is relevant to the NEO that consumption and investment decisions are not distorted by ensuring that pricing outcomes are not unduly influenced by differences in regulatory arrangements.
Note: *: Critical Importance= 100, High Importance=75; Mid-level Importance=50; Low Importance = 25; No Importance = 0; #: Pricing flexibility is an issue relevant to the level and structure of the price limit; * It is in the long-term interests of electricity users for DNSPs to receive a share of the economic gains of tariff reform under the WAPC.			

4 Incentives for DNSP to set Efficient Prices

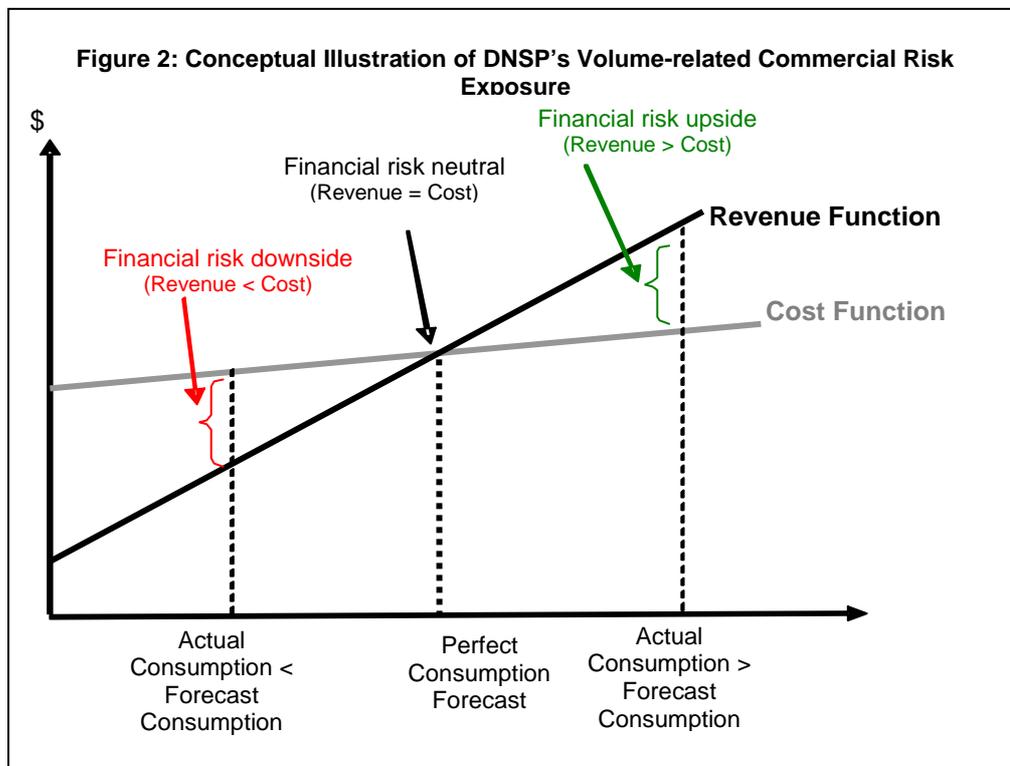
Question 2

- A. Do you consider a price cap or a revenue cap provides the best incentives to create efficient prices?
- B. To what extent do external factors override the incentives provided by the form of the control mechanism?

The discussion paper asserts that NSW DNSPs have responded to the commercial incentives under the WAPC by undertaking tariff reforms that are not in the long-term interest of electricity users. The AER have formed this view based on anecdotal evidence that the NSW DNSPs are pursuing “advantageous” tariff rebalancing for revenue maximisation purposes.¹² Ausgrid believes that this is a misguided comment that ignores the fact that the WAPC is an incentive mechanism designed to encourage DNSPs to move towards efficient pricing outcomes by potentially sharing in the economic gains created by reforms to the price signal.¹³ To ensure that all stakeholders are well informed on sound economic theory and industry experience, this section provides a simple summary of the economic theory of the WAPC and explores the issue of whether Ausgrid’s pricing behaviour during the current regulatory period is consistent with economic theory.

4.1 Economic Theory of the WAPC

It is generally accepted by regulatory economists and many Regulators that a price cap provides better incentives for DNSPs to set prices efficiently than a revenue cap.¹⁴ This is because DNSPs have a commercial incentive under a price cap to mitigate underlying economic profit risk by setting peak prices reflective of marginal cost and recovering common network costs in a least distortionary manner. The commercial incentive to mitigate underlying economic profit risk under the WAPC is illustrated conceptually below:



¹² AER 2012, Ibid, April, P.10

¹³ Note that there is no guarantee that DNSPs will earn higher revenues than the AER forecast revenue requirement by undertaking tariff reforms under the WAPC, but these reforms will reduce commercial risk if they result in a better alignment of network costs and revenues.

¹⁴ AEMC 2009, Review of Demand-Side Participation in the National Electricity Market, Final Report, November, P.18

It is clear from the simple conceptual example above that the level of incentive for a DNSP to undertake tariff reforms under the WAPC is dependent on the level of exposure to underlying profit risk, which is driven by the following considerations:

- The extent to which the DNSP’s network tariffs are economically efficient (i.e revenue and cost functions are aligned)
- The level of forecasting uncertainty in the volume environment.

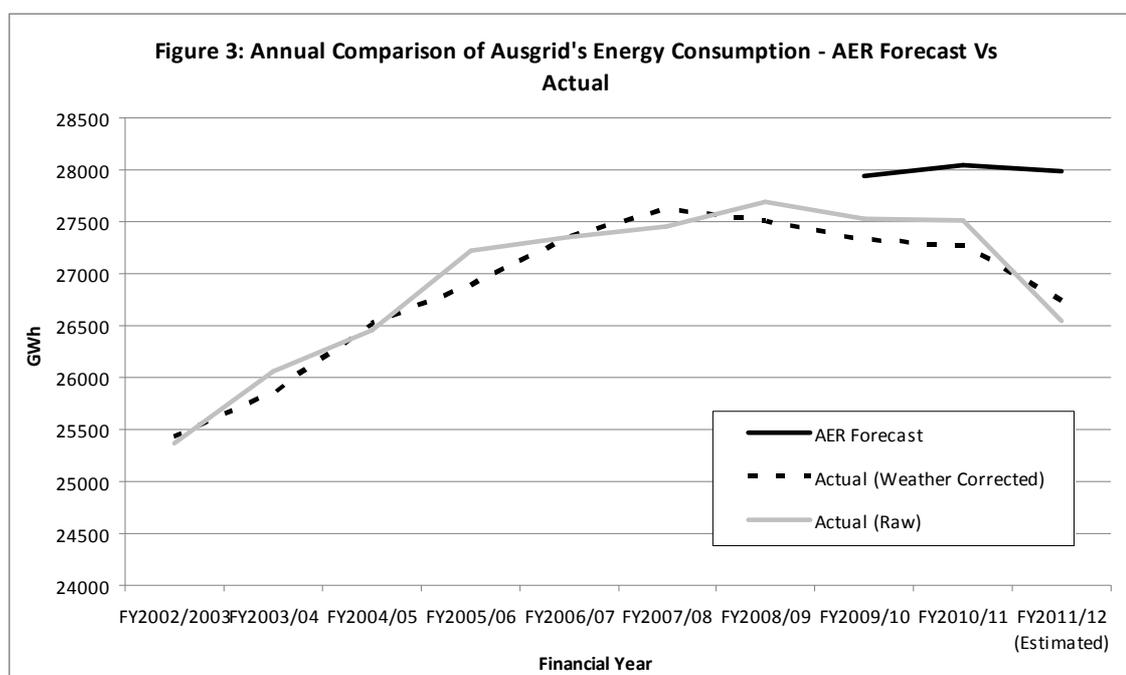
In a stable volume environment, the DNSP has a weaker incentive under the WAPC to reform network tariffs for commercial risk mitigation reasons. In this environment, the DNSP may be able to delay tariff reforms by accepting a modest increase in the level of commercial risk under the WAPC. However, in a highly uncertain volume environment, the DNSP will be exposed to significant commercial risk under the WAPC, particularly if their network tariffs are poorly structured and designed from an economic perspective. In this situation, the DNSP has little choice but to respond to the commercial incentives under WAPC by pursuing tariff reforms (i.e shift/rotation of revenue function in figure 1) and/or cost efficiencies (i.e shift/rotation of cost function in Figure 1) to safeguard their profitability in a deteriorating revenue environment. Ausgrid believes that it is important for the AER to recognise that both of these WAPC driven outcomes are consistent with the NEO in the sense that they will result in an improvement in economic welfare.

4.2 Is Ausgrid’s pricing behaviour under the WAPC consistent with theory?

This section explores the issue as to whether DNSPs are likely to respond to the incentives under the WAPC in the manner consistent with economic theory by considering the network tariff reforms undertaken by Ausgrid during the current regulatory period and the role of the WAPC in encouraging Ausgrid to undertake these reforms.

4.2.1 Ausgrid’s Volume Environment and Commercial Risk Exposure under the WAPC

The unanticipated weakness in energy consumption during the current regulatory period has exposed DNSPs in New South Wales to a material risk of earning less than their actual efficient cost of providing network services. Ausgrid has been particularly exposed to commercial risk under the WAPC as a consequence of our actual energy consumption falling markedly below the AER forecast used to set our X-factors applying to the current regulatory period, as shown below:



This deterioration in our energy consumption environment has both commercial implications for Ausgrid and broader economic consequences for society. The economic consequences arise because customers have become more responsive to price signals, resulting in poorly structured tariffs being more likely to cause economic harm by:

- discouraging users from consuming energy during periods when the network is likely to be unconstrained.
- encouraging peak demand for network capacity during periods when the network is likely to be congested.

The commercial consequence arises because Ausgrid will not be compensated under the WAPC for the loss of revenue associated with actual energy consumption being below the AER forecast used to set the X-factor. In light of the extent of the increase in our commercial risk exposure under the WAPC caused by the deterioration of our volume environment, Ausgrid was compelled for commercial reasons to pursue tariff reforms to deliver a better alignment between our revenue and cost functions.

4.2.2 Summary of Network Tariff Strategy

Ausgrid developed a long-term network tariff strategy to guide the annual price setting process during the current regulatory period. Given that network services are an essential service, Ausgrid developed this strategy with regard to both commercial and equity considerations.¹⁵

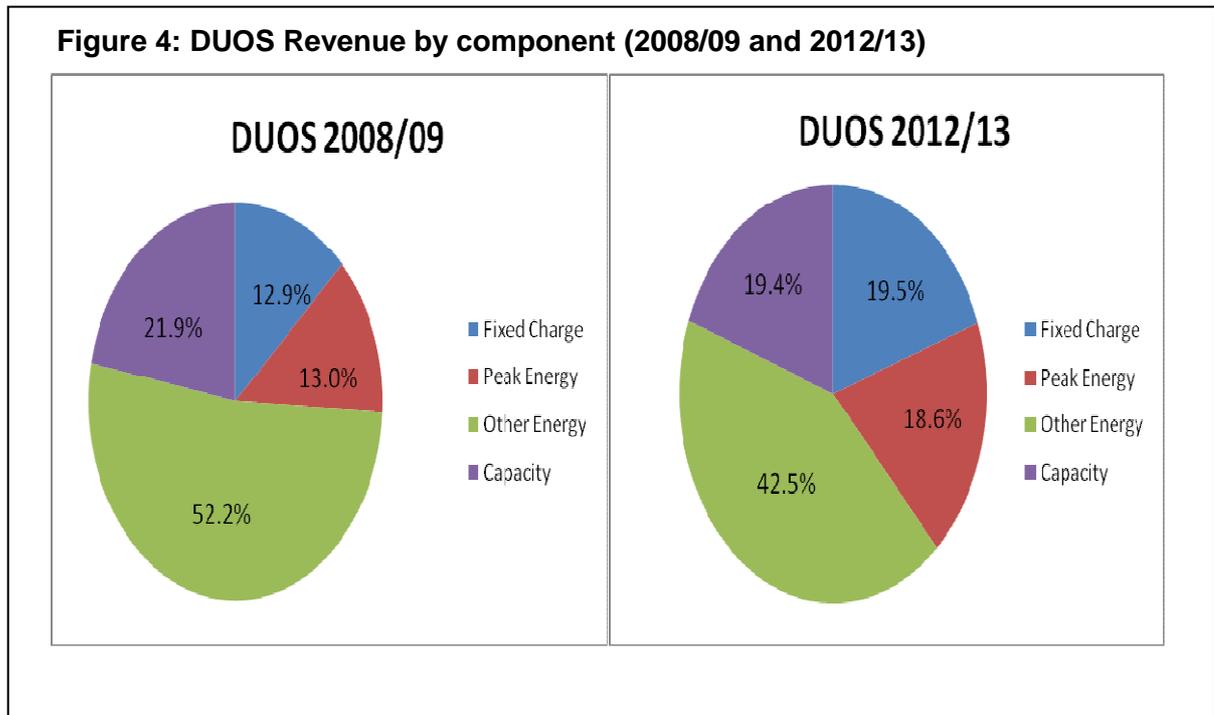
The key elements of our tariff strategy for the current regulatory period are summarised below:

- To invest in interval metering to enable a significant increase in the number of small customers (<40 MWh pa) on a Time of Use tariff;
- To significantly increase the level of peak energy charges and capacity charges to be more reflective of economic cost of network congestion; and
- To significantly re-balance network tariffs away from shoulder and off-peak energy charges towards fixed charges.

It is also important to note that the significant increase in our exposure to commercial risk under the WAPC as a consequence of the severe deterioration in our energy consumption environment has forced Ausgrid to accelerate the pace of tariff reforms during the current regulatory period to ensure that our network tariffs generate sufficient revenue to fund the efficient cost of network service provision.

¹⁵ A good example of balancing commercial and equity objectives is our decision to introduce a LV TOU capacity transition tariff on 1 July 2011 to ease the adjustment costs for small business customers that are no longer eligible to remain on the time of use tariff.

The pursuit of commercial risk mitigation under the WAPC by rebalancing and re-structuring our network tariffs and investing in interval metering has resulted in a better alignment of our revenue and cost functions as reflected in the following figure:



The tariff reforms undertaken during the current regulatory period have also result in Ausgrid’s peak energy and capacity charges being more reflective of Long Run Marginal Cost for small customers (Figure 5) and large business customers (Figure 6).

Figure 5: Peak energy and Capacity charges – Residential and Small Business Customers

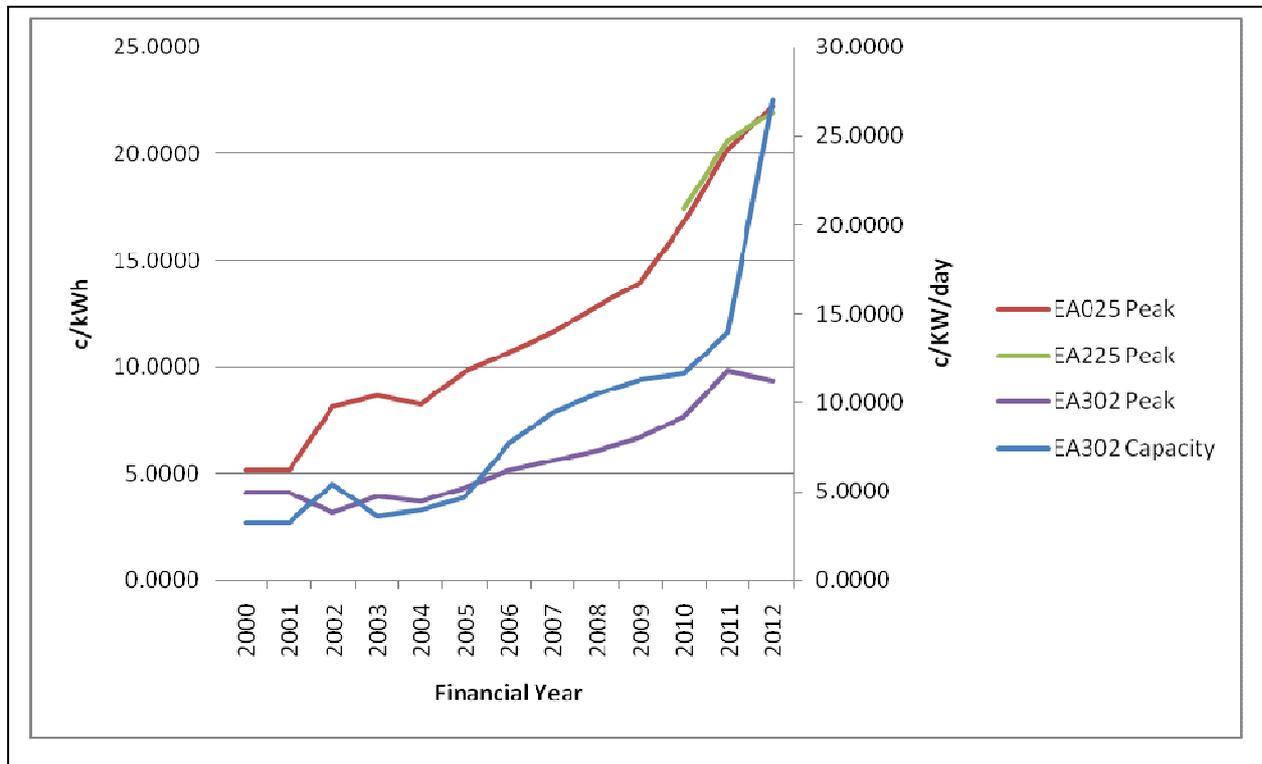
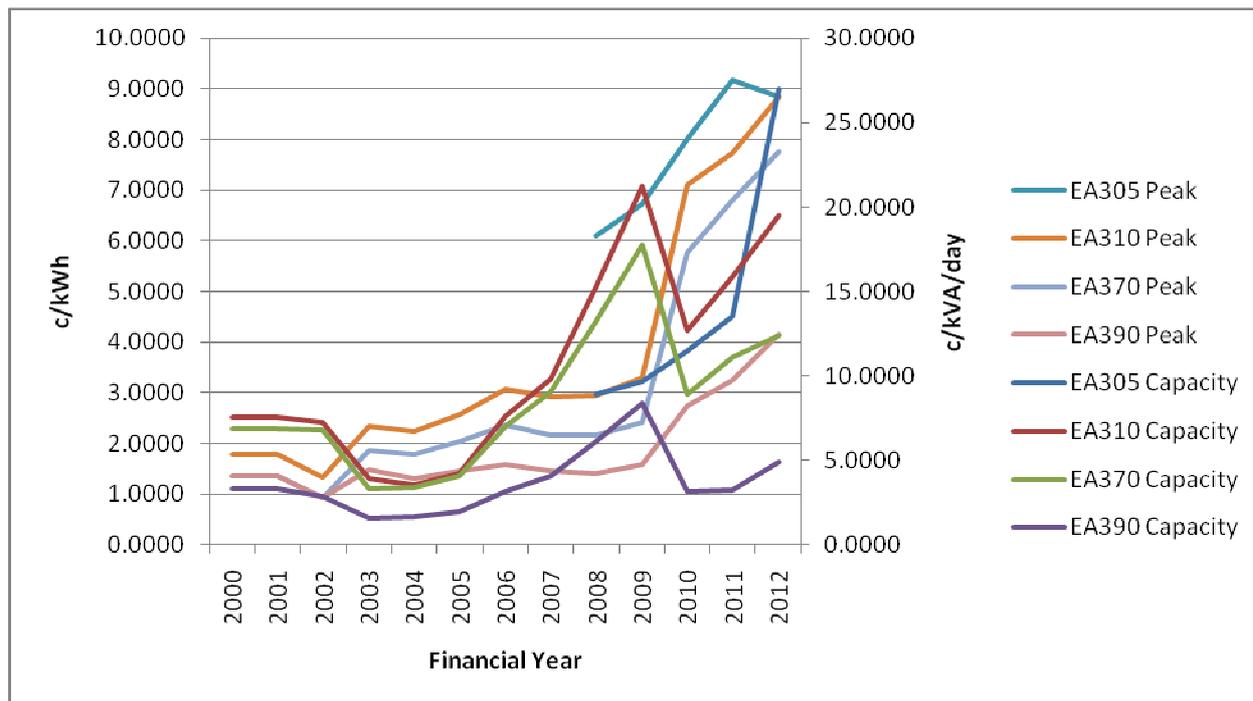


Figure 6: Peak energy and Capacity charges – Large Business Customers



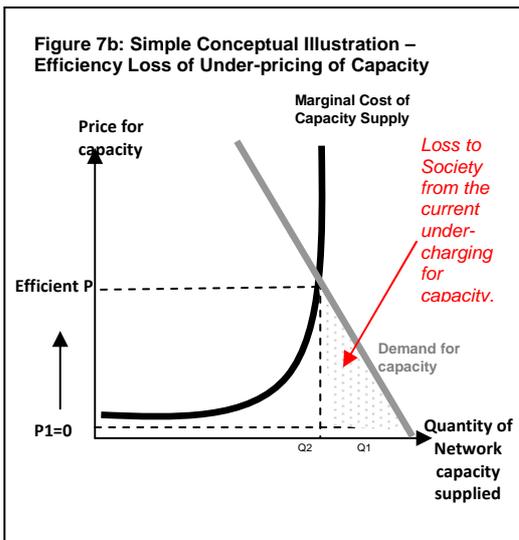
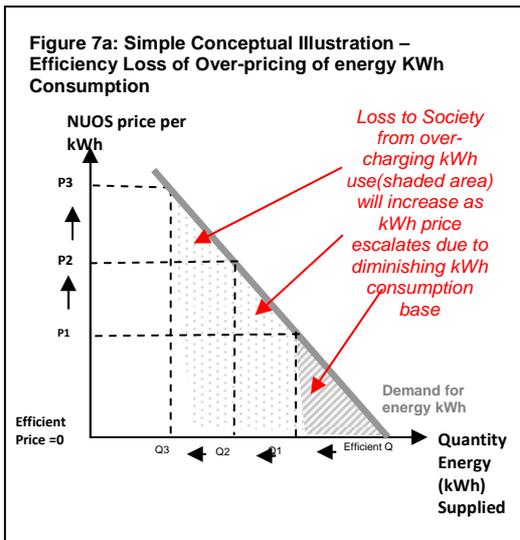
It is interesting to note that Ausgrid would not have responded to this environment in the same manner under a revenue cap. This is because the revenue cap would have safeguarded our commercial interest as any shortfall in network revenue due to unanticipated changes in our volume environment is allowed to be recovered from customers. The failure to reform network tariffs in this environment is likely to have adverse consequence for economic welfare and impose more severe adjustment costs on the most vulnerable households in society given that they have largely non-discretionary energy consumption patterns and cannot afford to upgrade to new and more energy efficient household appliances.¹⁶

4.2.3 Economic Implications of Ausgrid's network tariff reforms during the current regulatory period

The economic harm caused by inefficient tariff design under the current environment of increased price responsiveness is most evident where metering constraints undermine the tariff reform process, such as in the case of Ausgrid's Inclining Block Tariff (IBT) for residential and small business customers. Due to the severe pricing limitations of basic accumulation metering, Ausgrid is unable to structure the IBT to appropriately signal the economic cost of peak demand for network capacity and is forced to inefficiently recover marginal network costs through blunt energy-based charges. As a consequence, Ausgrid believes that customers on the IBT are likely to under consume energy at certain times (refer Figure 7a) in response to the energy charges being higher than efficient levels when the network is unconstrained and over consume peak network capacity due to the absence of an efficient capacity-based price signal (refer Figure 7b). In the absence of incentives to price efficiently (such as under a WAPC), there is a significant potential for energy-based network tariffs, such as the IBT, to be poorly designed from an economic perspective and to distort network usage patterns and investment decisions across the value chain to the detriment of economic welfare.¹⁷

¹⁶ It could be argued that the revenue cap exacerbates a price spiral effect because the DNSP is allowed under a revenue cap to recover from customers the revenue shortfall **and** a WACC interest for the time value of money.

¹⁷ For more information on this issue please refer to Ausgrid's submission to National Smart Meter Consumer Protections and Pricing Paper – Draft Policy Paper Two.



It is reasonable to assume that the economic efficiency problem of Ausgrid’s IBT is material given that there are currently around 1.2 million customers on this tariff and particularly in the situation where these customers have become more responsiveness to changes in the level of energy prices. Ausgrid and its predecessor EnergyAustralia recognised many years ago that the first-best solution to this problem is to replace their accumulation meter with an interval meter to enable these customers to receive efficient price signals. However in light of the significant lead time associated with an interval meter roll-out, Ausgrid recognised the importance of addressing economic problem illustrated in Figure 7a by appropriately reforming the IBT to minimise the distortion of energy consumption patterns in the meantime. This is the economic rationale underpinning Ausgrid’s interval meter roll-out to residential and small business customers, which is expected to result in the number of small customers on a Time of Use tariff at the network level to more than double over the current period to around 500,000 in FY 2013/14. The extent to which this tariff reform has increased economic welfare is dependent upon the customers assigned to the TOU tariff have changed their energy consumption and peak demand patterns.

5 Volume Risk and Revenue Recovery

Question 3

A. Do you consider a price cap or a revenue cap is better able provide DNSPs with an opportunity to recover efficient costs, while limiting revenue recovery above forecast?

B. Who should bear the risk of errors in forecast volumes, DNSPs or customers?

C. Is there scope for windfall gains for DNSPs under WAPCs due to (a) sales volume forecast error and (b) price changes during the regulatory control period?

5.1 Recovery of efficient costs

The WAPC is superior to a revenue cap in terms of enabling DNSPs to recover sufficient network revenue to fund their efficient cost of owning, maintaining and expanding the electricity network, particularly in the current environment of unprecedented volume and cost uncertainty. This is because under a WAPC the actual revenues of a DNSP are allowed to vary from the AER forecast revenue requirement in response to changes in energy consumption and peak demand for network capacity. The long-term interests of users is safeguarded by the natural dynamic under the WAPC towards setting efficient prices, which does not exist under a revenue cap.¹⁸ This incentive ensures that the annual movement in revenues under a WAPC tend to be reflective of annual changes in underlying economic costs of network service provision to the extent possible given metering constraints.

Allowing the actual revenues of a DNSP to vary in response to underlying cost drivers is particularly important in an uncertain volume environment where the AER revenue requirement is unlikely to be a reliable measure of efficient cost of network service. This is the key lesson learned from Ausgrid's previous experience under a revenue cap during the IPART 1999-2003 regulatory period where unanticipated volume growth resulted in substantial breaches of the revenue cap and severe economic distortions to prices and network usage patterns.

Ausgrid also wishes to reiterate that the WAPC is an incentive mechanism that allows DNSP to potentially share in the economic gains from undertaking tariff reforms in the long-term interests of electricity users. As discussed in previous sections, removing the incentive for NSW DNSPs to price efficiently is not economically justified in the current uncertain environment.

5.2 Optimal allocation of volume risk between parties

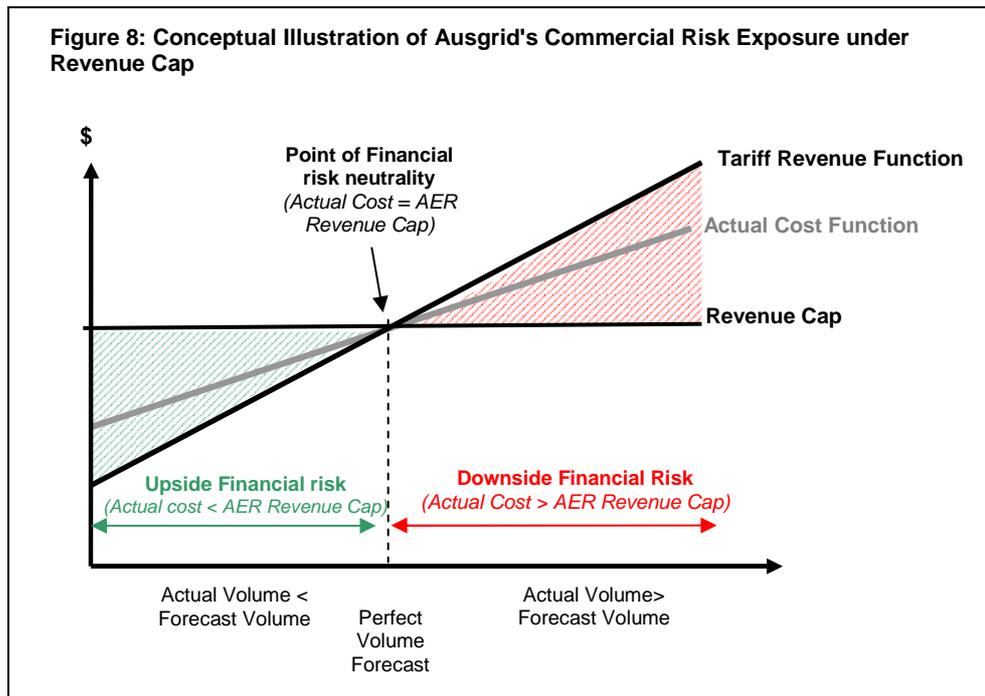
According to economic theory, it is in the best interests of society to assign risk to the party that is best able to manage this risk exposure. Ausgrid believes that there is an overwhelming case for DNSPs to bear the risk of errors in forecast volumes, rather than customers. Ausgrid has a proven track record under the WAPC of effectively managing on behalf of its customer base the forecast volume risk relating to the calculation of the X-factor and annual tariff setting process, reflecting, reflecting our expertise and willingness to pursue a range of risk mitigation strategies. It is reasonable to argue that allocating this risk to our customers, such as under a revenue cap is likely to result in economic harm as network usage and appliance investment patterns are distorted by unstable prices. It may also result in an increase in transaction costs as customers attempt to improve their price expectation by trying to understand the underlying drivers of this price volatility.

5.2.1 Windfall gain/losses

The potential for windfall gains/loss is an inherent characteristic of the regulatory process, regardless of whether the DNSP is under a WAPC or revenue cap. The most obvious source of windfall gain/loss is CPI forecasting errors, which is equally applicable to a WAPC or revenue cap. The less obvious sources of windfall gains/losses arise because of the specific characteristics of each form of control mechanism. The mechanism for generating potential windfall gains/losses

¹⁸AEMC 2009, Review of Demand-Side Participation in the National Electricity Market, Final Report, November, P.17

under a revenue cap is different to that under a WAPC and relates to decoupling of the actual revenue of the DNSP from the underlying economic cost function, as illustrated in conceptual terms below.



Because the DNSP is guaranteed to earn the AER revenue requirement during the regulatory period, the DNSP's underlying economic profit will be impacted by unanticipated changes in the level of peak demand for network capacity, which in turn will result in the DNSP having to spend more or less than the AER growth-related capital allowance during the regulatory period. In weaker than anticipated peak demand growth environment, the DNSP is likely to earn a windfall gain in economic profit as they efficiently delay capital expenditures. In stronger than anticipated demand growth environment, the DNSP is likely to be inefficiently punished under the revenue cap by having to expand the capacity of the network that is in the long-term interests of electricity users.

It is also important to note that the economic harm caused by the imposing a revenue cap on DNSPs in a uncertain volume environment is exacerbated by the incentive to price inefficiently under the revenue cap. This effect occurs because under an environment of efficient prices, where the change in the DNSP's efficient cost to serve caused by the unanticipated change in peak demand growth is likely to be reflected in the DNSP's tariff revenue function. For example in a strong peak demand growth environment, the DNSP's efficient cost will increase as capital expenditures are brought forward. At the same time, the DNSP's revenues are likely to breach the revenue cap to the extent that their tariffs are cost reflective. It is for this reason that the revenue cap is likely to encourage DNSP to move away from efficient prices. This view is supported the AEMC.¹⁹

The windfall gains under a WAPC are generated under different mechanism because the DNSP is exposed to the risk that unanticipated changes in the volume environment will have an impact (positive or negative) on the level of underlying economic profit. For example, the economic profit of a summer peaking DNSP is likely to be boosted in the event of a prolonged cold winter. Ausgrid argues that this profit effect does not represent a windfall gain given that it has been driven by random events that are outside the control of the DNSP. In fact, this type of risk is a part of the volume risk that DNSPs have to manage by improving the cost reflectivity of network tariffs.

¹⁹ AEMC 2009, Review of Demand-Side Participation in the National Electricity Market, Final Report, November, P.17

Finally, Ausgrid wishes to provide the AER and other stakeholders with an understanding of the financial magnitude and the underlying drivers of the windfall losses/gains impacting Ausgrid's commercial position during the current regulatory period. The following figure shows that Ausgrid's actual Network revenue exceeded the AER Network revenue requirement by around 3.7% or \$44.3m in FY 2009/10.²⁰ The major contributors to this revenue outcome are the increase to Transmission prices under the Transmission Revenue Cap (\$15.1m) and the AER forecasting error in relation to the CPI in FY 2009/10. After removing the distortion from the Transmission Revenue Cap and the windfall gains from the CPI forecasting error, the residual revenue difference is an immaterial \$8.3m or less than 1% of Ausgrid's network revenue requirement in FY 2009/10. Ausgrid strongly believes that an unexplained residual revenue difference of this magnitude should not be a concern of the AER, particularly in light of the significant uncertainty in our energy consumption environment.

Table 1: An analysis of Ausgrid's NUOS Revenue Variance in FY 2009/10		
	Unit	Outcome
Consumption Variance		
Total Actual Consumption	GWh	27,948
AER Forecast Total Consumption	GWh	27,527
Actual Consumption Difference	GWh	-421
	% of Total	-1.5
Network Revenue Variance		
AER Forecast NUOS Revenue	\$m	\$1,213.3
Actual NUOS Revenue	\$m	\$1,257.6
Actual NUOS Revenue Difference	\$m	\$44.3
	% of Total	3.7
Explanation of Network Revenue Variance		
CPI Forecasting Error	\$m	\$20.9
TUOS Increase under Revenue Cap	\$m	\$15.1
Residual Network Difference	\$m	\$8.3
	% of Total	0.066%

²⁰ The NSW DNSP Network Performance Report for FY 2009/10 is available from www.aer.gov.au

6 Incentives for DNSP to undertake Efficient Demand Management

Question 4

A. What incentives does a DNSP have to conduct Demand Side Management under a WAPC?

B. Is there any evidence to suggest that a revenue cap results in greater levels of demand side management than a WAPC?

Ausgrid strongly believes that DNSPs should be provided incentives to undertake demand management where it is expected to be in the long term interests of electricity users. While this assessment criteria is clearly relevant to the NEO, Ausgrid wishes to point out the design of appropriate demand management incentives is largely a separate issue to be addressed in a broader regulatory context. The first issue for the AER to decide is the economically desirable level of incentive to provide DNSPs. The second issue is to decide the optimal mechanism or suite of mechanisms to deliver this incentive to DNSPs. Ausgrid sees no logical reason why the choice of control mechanism will undermine the achievement of efficient demand side management outcomes as long as the AER has determined the appropriate level and mechanism to deliver the incentives to DNSPs. It is for this reason that Ausgrid has applied a low ranking of importance to this assessment criteria in the evaluation of the different forms of control mechanism, but strongly believes that this issue should be given a high importance in a broader regulatory context.

The discussion paper implies that there is a need to trade-off pricing efficiency and demand side management, in the sense that control mechanisms that provide incentives for efficiently pricing network services are biased against demand management and vice versa. Ausgrid strongly disagrees with the AER on this point as we believe that the incentives under the WAPC to improve the efficiency of network prices will provide dynamic signals to customers regarding the economic cost of their network usage and provide feedback to DNSPs for efficiently allocating resources to pursue demand management opportunities or to expand or enhance the network where it is efficient to do so.

While it is clear that DNSPs suffer a loss of revenue when they undertake demand side management under a WAPC, it is important to consider if this creates a barrier to efficient demand side management. The key issue is to assess whether DNSPs have the incentive to set distribution prices efficiently and where prices are poorly structured do they have the incentive to pursue efficient demand side management opportunities.

As discussed in detail in section 4 of our submission, there is an overwhelming case in favour of a WAPC over a revenue cap in relation to providing DNSPs with appropriate incentives to set efficient prices. This is particularly the case given that the revenue cap provides incentives for a DNSP to set prices in a manner contrary to economic principles by setting peak prices above economic cost in an attempt to defer capital expenditure that is justified on economic grounds. The resultant distortion of prices, network usage patterns and network investment is clearly not in the long-term interests of electricity users. It is relevant to note that the AEMC shares Ausgrid's views on the superiority of the WAPC over a revenue cap.²¹

While the WAPC produces superior economic outcomes in terms of efficient network use and investment, Ausgrid believes that it is in the long-term interests of electricity users to provide DNSPs with additional incentives to pursue non-tariff based demand side management opportunities. It is best to achieve this outcome by retaining the WAPC given the pricing efficiency benefits and addressing the incentive problem with demand side management by imposing an appropriately designed incentive mechanism that enables DNSPs to share in the economic efficiency gains created by investing additional resources in demand side management. By retaining the WAPC and addressing the demand management incentive problem in a transparent

²¹ AEMC 2009, Stage 2: Final Report Review of Demand-Side Participation in the National Electricity Market, DSP1, November p.18 and Appendix B.

and well targeted manner, the AER will achieve the best of both worlds in the sense that DNSPs will have the incentive to pursue additional demand management outcomes without undermining efforts to improve the cost reflectivity of network tariffs, as would be the case under a revenue cap.

7 Price Flexibility and Stability

Question 6

- A. Do you consider a WAPC or a revenue cap can better provide price flexibility?**
- B. What are the benefits/detriments from a high level of price flexibility?**
- C. What is the magnitude of disruption caused by annual price changes from the overs and unders account variations under revenue caps?**

The extent to which DNSPs have the flexibility to reform their existing network tariffs and introduce innovative network tariffs is clearly an issue relating to the level and structure of side constraints, rather than the control mechanism. For example, if the same level and mechanism of side constraint is applied, there is no reason to believe that the level of pricing flexibility provided to the DNSP will vary depending on whether the DNSP is governed by a WAPC or Revenue Cap. It is for this reason that price flexibility should not be an assessment criteria used in the evaluation of the different forms of control mechanism.

It is important to note that the choice of control mechanism does influence the incentive of the DNSP to use the flexibility under the side constraint mechanism to undertake tariff reforms that are in the long-term interests of electricity users. Economic theory and the observed pricing behaviour of DNSPs under the WAPC strongly support the view that the WAPC is superior to the revenue cap in this regard. This issue is discussed in Section 4 of our submission.

Ausgrid also wishes to point out that it disagrees with the AER's comment that revenue cap is superior to the WAPC because the forecasts associated with the introduction of new tariffs or tariff parameters under a revenue cap are not as crucial as under a WAPC because they do not alter the Maximum Allowed Revenue (MAR). This is because under a revenue cap the DNSP has little, if any, incentive to reliably forecast the volume and revenue implications of a new tariff or tariff parameter because the consequences of the forecasting error will be borne by customers in the form of prices increases (decreases) due to the operation of the overs and unders account. The WAPC operates in an entirely different manner in the sense that the DNSP is required to adjust the historical quantities to reflect the new tariffs or tariff parameters. If customers respond to these new tariffs or tariff parameters by changing their network usage patterns, the DNSP may earn less network revenue, but will be more compensated by a reduction in network cost to the extent that the new tariff or tariff parameter are reflective of economic cost. In this way, the DNSP and customers share the economic efficiency benefit associated an improvement in the cost reflectivity of prices.

Ausgrid believes that price stability should be considered in the evaluation of the different forms of control mechanism given that customers are more easily able to form reliable long-term price expectation to base their decisions on network capacity requirements, energy consumption and appliance investment. The discussion paper clearly states that WAPC produces a high level of stable prices, whereas a revenue cap produces a low level of price stability. It is important for the AER to realise that the extent of price instability under a revenue cap is directly related to the level of uncertainty in the volume environment. In the current uncertain volume environment, it is conceivable that the deviation (positive or negative) from the MAR in the next regulatory period could be in excess of \$500m for Ausgrid alone²², which is clearly not in the long-term interests of electricity users.

²²This indication is based on the forecast volume risk inherent in EnergyAustralia's initial and revised regulatory proposals for the current regulatory period.

8 Administration Cost

Question 5

A. Do you consider a price cap or a revenue cap is likely to provide lower administration costs?

B. How significant are the differences in administration costs between these two forms of control?

C. What are the likely administrative costs of changing from one control mechanism to another?

Ausgrid believes that there are no material differences in on-going administration costs between the different forms of control mechanism and agrees with the AER that the administrative effort occurs at the different times. However, it is important that the AER recognises the significant investments made by the NSW DNSPs to improve their volume forecasting performance and pricing expertise since the WAPC was introduced on 1 July 2004 in response to strong commercial incentives to do so under the WAPC. These performance improvements relate to developing sophisticated data management and analytical systems, researching customer behaviour and appliance usage, refinements to forecasting methods and techniques. Given that it has taken almost a decade for the NSW DNSPs to respond to the WAPC incentives by developing the current level of sophistication in these areas, the inevitable loss of these skills and expertise if a revenue cap were imposed in the next regulatory period represents an enormous loss to the industry and ultimately to the detriment of end-customers in the form of higher than otherwise levels of price volatility due to forecasting errors. As a result, Ausgrid believes that this evaluation criteria supports the continuation of the WAPC as it is clearly not in the long-term interests of electricity users to undermine the incentives of DNSPs to foster their volume forecasting and pricing expertise by imposing a revenue cap.

9 Consistency of Regulatory Arrangements

Question 7

A. Is it desirable to have consistent control mechanisms across jurisdictions?

Consistency of regulatory arrangements is a desirable outcome from an economic perspective, particularly in the case of DNSPs, such as Ausgrid, that share their economic base with another DNSP. The economic consequences from applying different forms of control mechanism in this situation arise because of the investment and consumption distortions caused by differences in pricing incentives. For this reason, consistency in the control mechanism between DNSPs is an important assessment criteria. This is not to be construed to mean that differences in the control mechanism should not exist, but rather the onus should be on the AER to justify any proposed inconsistencies on economic grounds i.e differences in regulatory arrangements are necessary to support the achievement of the NEO.

Ausgrid believes that the WAPC for distribution services represents the perfect economic outcome as DNSPs have the incentive to efficiently set their distribution tariffs. It is for these reasons that Ausgrid fully supports the current regulatory arrangements for NSW DNSPs remaining in place in the next regulatory period.

10 Conclusions

Question 8

A. Is it appropriate to adopt a revenue cap for standard control services for the NSW and ACT 2014–19 distribution determinations?

B. What other issues should be considered in determining which control mechanism to adopt?

Ausgrid strongly opposes any change to the form of control mechanism for distribution network services in the next regulatory period. As outlined in our submission the WAPC for distribution prices has produced significant economic benefits for users as reflected in the significant tariff reforms undertaken since the introduction of the WAPC on 1 July 2004.

It would be clearly against the long-term interests of electricity users to remove the incentives on NSW DNSPs to continue to reform our network tariffs by imposing a cap on distribution revenues, particularly in the current volume environment of unprecedented uncertainty.