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Electricity Network Inquiry
Productivity Commission
PO Box 1428
Canberra City ACT 2601
By email electricity@pc.gov.au

Dear Commissioners

Response to Electricity Network Regulatory Frameworks Draft Report

ActewAGL Distribution welcomes the opportunity to respond to the Productivity Commission's *Electricity Network Regulatory Frameworks Draft Report*, released on 18 October 2012.

ActewAGL Distribution is a public-private partnership ultimately controlled by the ACT Government owned ACTEW Corporation and Singapore Power International. ActewAGL Distribution owns the electricity distribution network in the ACT and gas distribution networks in the ACT and the adjoining areas of New South Wales and the Shoalhaven region. The ActewAGL joint venture also has interests in energy retailing in the ACT and south-eastern New South Wales.

ActewAGL Distribution is a member of the Energy Networks Association (ENA) and supports the ENA's comprehensive response to the *Draft Report*. In this submission we provide comments on three areas of particular interest to ActewAGL Distribution:

- Estimating the value of reliability for consumers
- Benchmarking
- Network pricing

ActewAGL Distribution supports the Commission's broad findings on these matters, but has some concerns about the details in the draft recommendations. For example, we agree with the Commission's comments (in chapter 14) on the importance of estimating the value placed by consumers on changes in reliability. However, we suggest that insufficient attention has been paid to the choice modelling approach to estimating this value.

In relation to benchmarking, we strongly support the Commission's findings and draft recommendations on the limitations of aggregate benchmarking. While we also agree that benchmarking can be valuable in certain circumstances, we believe that the Australian Energy Regulator (AER) must be required, in developing new

benchmarking tools, to establish that the benefits will more than offset the costs associated with new reporting and information provision requirements.

In relation to network pricing, we agree that cost-reflective pricing is important. However we believe that the Commission is advocating an overly prescriptive approach to network pricing, proposing new national rules and requirements to address matters which instead require more flexible responses, taking account of particular network characteristics and costs and customer preferences. ActewAGL Distribution does not support the recommended changes to the network pricing rules.

These matters are discussed in more detail below.

Estimating the value of reliability for consumers

ActewAGL Distribution agrees with the Commission's comments on the importance of estimating the value that customers place on changes in reliability. Debate over how best to estimate this value is often confused by differences in stakeholders' understanding of the term "value". An important step, which the Commission could contribute to, would be agreement on a clear definition of value within a formal theoretical framework. In our view, the relevant measures of value are what are defined in the economics literature as the Hicksian compensating or equivalent variation. These values are equal to the maximum amount that customers would be willing to pay (or the minimum amount they would be willing to accept) for a reliability improvement (or deterioration).¹

ActewAGL Distribution notes the Commission's comments on the challenges associated with deriving value estimates from surveys. It is important to recognise that, despite these challenges, well constructed surveys are generally recognised as superior to the available revealed preference data.

Two main survey approaches are used in Australia. One approach is the "VCR" survey approach developed by Monash University's Centre for Electrical Power Engineering in 1997 and later updated by Charles River Associates in 2002 and 2007 and Oakley Greenwood for the Australian Energy Market Operator (AEMO) in 2011 and for the Australian Energy Market Commission (AEMC) in 2012. This approach focuses on estimating the out-of-pocket costs that would result from deterioration in reliability. It received considerable attention in the Commission's *Draft Report*.

The other approach is choice modelling, which has been used by NERA and ACNielsen² and the Australian National University³ in the ACT, by KPMG in South Australia,⁴ and in many studies internationally, including by Accent for Ofgem in the

¹ See, for example, Randall, A. and Stoll, J. 1980, Consumer's Surplus in Commodity Space, *The American Economic Review*, 70(3), 449-455.

² NERA and ACNielsen 2003, Willingness to pay research study, A report for ACTEW Corporation and ActewAGL, September.

³ McNair, B.J. and Ward, M.B. 2012, Balancing cost and standards of service: the stated preferences of Canberra households, Energy Networks Conference, 2 May, Brisbane, Australia.

⁴ KPMG 2003, Consumer preferences for electricity service standards, Report to the Essential Services Commission of South Australia, September.

United Kingdom (UK)⁵ and by the Electricity Authority in New Zealand.⁶ Choice modelling simulates a market setting by asking respondents to indicate their preference over variety of price-reliability scenarios. Respondents' choices reveal their willingness to pay (or accept compensation) for different types of changes in reliability. Comparably little attention was dedicated to this approach in the *Draft Report* despite its international standing. Further consideration of this approach by the Commission ahead of the Final Report is needed, particularly given its use in the regulation of electricity networks in the UK and New Zealand as well as in public policy more broadly in the transport, environment, and health sectors.

The results derived from the VCR and choice modelling survey approaches are similar in some ways. Both measure value in terms of reliability events or scenarios and both can be converted to an estimated value of lost load and used for probabilistic planning. However, choice modelling holds a major advantage over the VCR survey approach – it is consistent with the economic concepts of compensating and equivalent variation.⁷ By focussing on out-of-pocket expenses, the VCR survey approach will tend to understate values by omitting non-financial costs associated with inconvenience, particularly for domestic customers.

The most significant challenges associated with using choice modelling to value non-market goods relate to contexts where respondents have little or no experience with the good or service in question and where respondents have no incentive to answer carefully and truthfully. In the electricity reliability context, respondents have generally experienced some form of supply interruption and our experience confirms customers understand that price-reliability options could be applied on the basis of survey findings, particularly if the survey has been commissioned by a utility or regulatory body where the choice sets are professionally calibrated and validated.

Choice modelling studies are able to overcome the criticisms of the VCR surveys made by the Commission in the *Draft Report*. They can readily be designed to estimate values for momentary interruptions and for interruptions occurring at different times of day. They can deliver a rich understanding of preference heterogeneity, both observed (through estimated relationships between socio-economic characteristics and willingness to pay (WTP)) and unobserved (through conditional taste parameter estimates).⁸ In relation to the Commission's concern over differences in estimates of WTP and willingness to accept (WTA), we note that WTA is not income-constrained and that substitutes to electricity network services

⁵ For example, Accent 2008, Expectations of DNOs and willingness to pay for improvements in service, Report prepared for OFGEM, July.

⁶ Electricity Authority 2012, Investigation into the value of lost load in New Zealand – Summary of findings, available at: <http://www.ea.govt.nz/our-work/programmes/transmission-work/investigation-of-the-lost-load/>

⁷ Small, K.A. and Rosen, H.A. 1981, Applied Welfare Economics with Discrete Choice Models, *Econometrica*, 49(1), 105- 130.

⁸ See, for example, Fiebig, D.G., Keane, M.P., Louviere, J., Wasi, N. 2010, The Generalized Multinomial Logit Model: Accounting for Scale and Coefficient Heterogeneity, *Marketing Science* 29(3), 393-421.

are very costly, which has been shown to explain differences in WTP and WTA.⁹ We also note that this result is consistent with loss aversion.¹⁰

For the reasons described above, ActewAGL Distribution supports the use of choice modelling for future studies into the value of reliability. We agree that specific studies need to be undertaken in each jurisdiction given that results can differ (as noted by the AEMC)¹¹ and lessons need to be learnt from past studies. We note the Commission's draft recommendation that the Australian Bureau of Statistics (ABS) be given responsibility for undertaking these surveys. Non-market valuation is a specialised area. It is a rapidly evolving and technically demanding area that requires a very strong link between industry and the statistical experts in this field. The preferred model and arrangement for efficient and effective management and oversight of the conduct of such studies warrants further consideration.

Benchmarking

ActewAGL Distribution strongly supports the Commission's finding that, at this stage, aggregate benchmarking models are ill-suited to setting regulatory allowances. We also support, in principle, the draft recommendations on how benchmarking should be used by the AER. We accept that there may be benefits from aggregate benchmarking, provided that the results "control, to the greatest extent possible, for any significant differences in operating environments of the businesses" (draft recommendation 8.1). There may also be benefits from "detailed benchmarking of particular aspects of the performance of businesses" (draft recommendation 8.2). In both cases the AER should be required to establish that the benefits from the additional benchmarking will more than offset the likely significant costs.

In relation to aggregate benchmarking of productivity, the AEMC concluded in its 2008-11 review of the use of total factor productivity that a consistent regulatory data set must be created but "the existing data are not consistent, reliable or robust."¹² The AEMC noted that aligning reporting practices to develop consistent data across the industry would involve costs for service providers and regulators. ActewAGL Distribution considers that these costs would be significant, particularly for relatively small network businesses. The potential for overlap and inconsistency with existing extensive AER information requirements, through the Regulatory Information Notice (RIN) process, adds to the costs.

In draft recommendation 8.12 the Commission says that the AER should "periodically examine" its benchmarking methodologies and assess compliance costs. ActewAGL Distribution supports such periodic assessment, but also believes that the AER

⁹ Hanemann, M.W. 1991, Willingness to Pay and Willingness to Accept: How Much Can They Differ? *The American Economic Review*, 81 (3), 635-647.

¹⁰ Kahnemann, D. and Tversky, A. 1991, Loss Aversion in Riskless Choice: A Reference-Dependent Model, *Quarterly Journal of Economics*, 106 (4), 1039-1061.

¹¹ AEMC 2012, *Review of Distribution Reliability Outcomes and Standards – NSW Workstream, Final Report*, August, p. 131.

¹² AEMC 2011, *Review into the use of total factor productivity for the determination of prices and revenues, Final Report*, June, p. 9.

should be explicitly required to clearly establish that there will be net benefits from any new benchmarking, *before* any new reporting requirements are imposed.

Network pricing

In the *Draft Report* the Commission highlights the potential benefits of moving to cost-reflective time-based pricing. The prior AEMC *Power of Choice Draft Report* and the subsequent *Report of the Senate Select Committee on Electricity Prices* have also proposed more cost-reflective and time-based pricing as a central part of electricity reform packages.

ActewAGL Distribution agrees that cost-reflective network pricing is important for encouraging efficient supply and use of electricity. However, the extent to which consumers face the price signals for efficient use of electricity depends on how retail prices are set. ActewAGL Distribution agrees with the Commission's finding that retail price deregulation will help remove any unnecessary constraints on market based outcomes and allow pricing flexibility and innovation in the retail sector.¹³

The appropriate structure and level of network prices will depend on a range of factors such as the relevant network cost drivers, the characteristics and preferences of consumers, and implementation costs such as metering costs. These factors will vary across networks, so flexibility in network price setting is critical. Recognising this, the current National Electricity Rules (clause 6.18) contain a set of high level pricing principles, rather than prescription on how prices must be set. The current distribution pricing rules were developed following extensive analysis and consultation and reflect the position that they should be:

- Sufficiently high level as to allow for the various operating contexts of different DNSPs across Australia; and
- Not too prescriptive in the Rules.¹⁴

In the *Draft Report* the Commission says “the content and wording of the clause (6.18) provides both the scope and encouragement for distribution businesses to adopt efficient pricing regimes”. Nevertheless, the Commission recommends a significant increase in the degree of prescription in the network pricing rules and a tightening of the pricing approval process (draft recommendations 11.3 and 11.4), on the basis that “the existence of this clause has not precluded substantial divergences from efficient pricing approaches”.¹⁵ ActewAGL Distribution does not support these draft recommendations.

Within the framework provided by the current pricing rules, ActewAGL Distribution has developed a range of tariffs which include time-of-use and demand or capacity

¹³ Productivity Commission 2012, *Electricity Network Regulatory Frameworks, Draft Report*, Vol. 2, p. 415

¹⁴ Network Policy Working Group 2006, *Distribution Pricing Rule Framework*, December, p. 4

¹⁵ Productivity Commission 2012, *Electricity Network Regulatory Frameworks, Draft Report*, Vol. 2, October, p. 386

components. More than 50 per cent of the total load in the ACT is now subject to time-of-use or controlled load (off-peak) charges. For the non-residential sector, 80 per cent of the load is on time-of-use or controlled load tariffs. The application of maximum demand and capacity tariffs in several commercial tariff options has further strengthened incentives for efficient use of the network resulting in improved load factors.

New requirements on the structure and level of tariffs, combined with the required new metering infrastructure, are likely to impose costs on ActewAGL Distribution and its customers, but generate limited benefits. The estimated potential benefits of time-of-use pricing, and particularly critical peak pricing, referred to by the Commission warrant further explanation in the final report. There are likely to be different drivers of costs and benefits for each network based on design and capacity constraints, current and future demand and consumption trends in total and for specific user segments and locations, and the price elasticity of demand. The assessment of the optimal mix of demand and supply side options for most efficiently using and augmenting the network needs to take all these factors into account.

The Commission recognises the importance of taking account of specific network characteristics and circumstances in relation to smart meters, recommending that distribution businesses roll-out smart meters on a region-by-region basis only after assessing the net present value of benefits and costs. ActewAGL Distribution supports this approach.

Yours sincerely

Michael Costello
Chief Executive Officer