ActewAGL for you

25 January 2013

Mr John Pierce
Chairman
Australian Energy Market Commission
PO Box A2449
SYDNEY SOUTH NSW 1235

Dear Mr Pierce

Review of distribution reliability outcomes and standards – Response to Draft Report National Workstream

ActewAGL Distribution (ActewAGL) welcomes the opportunity to respond to the Australian Energy Market Commission's (the Commission's) Draft Report on the national workstream of its review of distribution reliability outcomes and standards.

ActewAGL focuses in this submission on the issue of estimating the value placed on changes in reliability. ActewAGL notes that the Commission does not have a view as to the best method available for estimating this value and that this matter would be "addressed in the final report if the Commission is requested by the SCER to develop a best practice framework."[1] Non-market valuation is a technically demanding area that is the focus of ongoing academic research. However, previous assessments, such as that undertaken by the Centre for International Economics for the Independent Pricing and Regulatory Tribunal of New South Wales in 2001, would be of assistance.[2]

Debate over potential methods is often confused by differences in stakeholders' understanding of the term "value." An important step, to which the Commission could contribute now, would be agreement on a clear definition of value within a formal theoretical framework. In our view, as noted in our submission of 21 August 2012, 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).[3]

Due to the absence of available revealed preference data, reliability valuation studies tend to utilise survey approaches to collect stated preference data. Two main survey approaches have been used in Australia. One approach is the "VCR" survey approach developed by Monash University's Centre for Electrical Power Engineering in 1997[4] and later updated by Charles River Associates in 2002[5] and 2008[6] and by Oakley Greenwood for the Australian Energy Market Operator (AEMO) in 2011[7] and for the Commission in 2012.[8] This approach focuses on estimating the out-of-pocket costs that would result from deterioration in reliability.

The other approach is choice modelling, which has been used by NERA and ACNielsen[9] and the Australian National University[10] in the ACT, by KPMG in South Australia,[11] and in many studies internationally, including by Accent for Ofgem in the United Kingdom (UK)[12] and by the Electricity Authority in New Zealand.[13] Choice modelling simulates a market setting by

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asking respondents to indicate their preference over a variety of price-reliability scenarios. Respondents' choices reveal their willingness to pay (or accept compensation) for different types of changes in reliability. This approach can be more costly to implement than the VCR approach due to the expertise required to design the price-reliability scenarios and to derive estimates of willingness-to-pay from respondents' choices, but will deliver a richer data set.

Both VCR and choice modelling survey approaches 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.[14] By measuring out-of-pocket expenses for imperfect substitutes, the VCR survey approach will tend to understate the real value of reliability by omitting non-financial costs associated with inconvenience, particularly for domestic customers.[15] We note that the Charles River Associates report on VCR in 2002 concluded that a choice modelling (or "tradeoff") approach should be considered for future studies into the value of residential reliability.[16]

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.

Specific studies need to be undertaken in each jurisdiction given that results can differ, as noted by the Commission.[17] For the reasons described above, ActewAGL supports the use of choice modelling for these studies.

If you would like to discuss any aspect of our submission please contact Dr Ben McNair, Principal Economist, on (02) 6248 3386.

Yours sincerely

David Graham
Director Regulatory Affairs and Pricing

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[1] Australian Energy Market Commission 2012, *Draft Report – National workstream, Review of distribution reliability outcomes and standards*, November, p18.

[2] Centre for International Economics 2001, *Review of willingness-to-pay methodologies*, Report for IPART, August.

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

[4] Khan, M.E. and Conlon, M.F. 1997, *Value of Lost Load*, Report for Victoria Power Exchange by the Centre for Electrical Power Engineering (CEPE), Department of Electrical and Computer Systems Engineering, Monash University.

[5] Charles River Associates 2002, *Assessment of the Value of Customer Reliability (VCR)*, Report for VENCorp, December.

[6] Charles River Associates 2008, *Assessment of the Value of Customer Reliability (VCR)*, Report for VENCorp, August.

[7] Oakley Greenwood 2011, *Valuing Reliability in the National Electricity Market*, Final Report to the Australian Energy Market Operator, March.

[8] Oakley Greenwood 2012, *NSW Value of Customer Reliability*, Final Report to the Australian Energy Market Commission, May.

[9] NERA and ACNielsen 2003, *Willingness to pay research study*, A report for ACTEW Corporation and ActewAGL, September.

[10] 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.

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

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

[13] 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/

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

[15] However, in the 2012 NSW VCR study, for example, this understatement may have been more than offset by an upward bias caused by valuing costs of outages occurring at the worst possible time for each respondent.

[16] Charles River Associates 2002, *Assessment of the Value of Customer Reliability (VCR)*, Report for VENCorp, December, p45.

[17] Australian Energy Market Commission 2012, *Review of Distribution Reliability Outcomes and Standards – NSW Workstream, Final Report,* August, p.131.