

public interest
ADVOCACY CENTRE

But what's the USE?

**Submission to AEMC Reliability Frameworks Review
Issues Paper**

22 September 2017

Introduction

The Public Interest Advocacy Centre

The Public Interest Advocacy Centre (PIAC) is an independent, non-profit legal centre based in New South Wales. Established in 1982, PIAC tackles systemic issues that have a significant impact upon disadvantaged and marginalised people. We ensure basic rights are enjoyed across the community through litigation, public policy development, communication and training.

Our work addresses issues such as:

- homelessness;
- access for people with disability to basic services like public transport, education and online services;
- Indigenous disadvantage;
- discrimination against people with mental health conditions;
- access to energy and water for low-income and vulnerable consumers;
- the exercise of police power;
- the rights of people in detention, including the right to proper medical care; and
- government accountability, including freedom of information.

PIAC is funded from a variety of sources. Core funding is provided by the NSW Public Purpose Fund and the Commonwealth and State Community Legal Services Program. PIAC also receives funding from the NSW Government for its Energy and Water Consumers Advocacy Program and from private law firm Allens for its Indigenous Justice Program. PIAC also generates income from project and case grants, seminars, donations and recovery of costs in legal actions.

Energy and Water Consumers' Advocacy Program

The Energy + Water Consumers' Advocacy Program (EWCAP) represents the interests of low-income and other residential consumers of electricity, gas and water in New South Wales, developing policy and advocating in energy and water markets. PIAC receives policy input to the program from a community-based reference group whose members include:

- Council of Social Service of NSW (NCOSS);
- Combined Pensioners and Superannuants Association of NSW;
- Ethnic Communities Council NSW;
- Salvation Army;
- Physical Disability Council NSW;
- Anglicare;
- Good Shepherd Microfinance;
- Financial Rights Legal Centre;
- Affiliated Residential Park Residents Association;
- Tenants Union; and
- Mission Australia.

Submission to AEMC Reliability Frameworks Review Issues Paper

The Public Interest Advocacy Centre (PIAC) thanks the AEMC for investing time and effort in developing a highly informative and balanced Issues Paper, which forms a sound basis for discussion of many of the complicated and interrelated matters relating to this review.

PIAC agrees with the AEMC that this review is timely, and hopes that it will bring clarity to a public debate which is largely characterised by the prospect of a number of government interventions that appear unlikely to result in the best outcomes for consumers.

In this submission, PIAC addresses a number of key issues that relate to the Issues Paper, but do not answer all of the questions posed directly. We would be happy to identify answers to specific questions from the Issues Paper if requested, and to meet to explore specific issues further, including on aspects that we have not addressed herein.

We have also provided some discussion from our recent submission to the Reliability Panel's Issues Paper for the Reliability Standards and Settings Review.

Scope of review (and Question 4)

The AEMC notes that the review will consider 'how existing variable generation can be made firmer in the future.'

In PIAC's view, the benefit of the well-connected energy system we have today would be better acknowledged by instead considering 'how the intermittency of variable generation can be balanced in the future'. This would give consideration to distributed solutions, rather than the narrower and more restrictive 'making generation firmer', that may limit actions to collocated modifications to existing generators, which could be inefficient and cost consumers more than needed.

For example, variable output from a remote wind farm may be balanced by a cluster of batteries that are located in metropolitan homes, or by industrial demand response, either of which services may provide multiple value streams.

This change would be more consistent with the proposed principles for the review and is also a key consideration for the Generator Reliability Obligation and related questions (Question 4).

Proposed Principles (Question 1)

PIAC supports the AEMC's proposed principles for the review,¹ and makes one suggestion: that in addition to 'Technology neutrality' the AEMC considers 'Service neutrality'. This would imply, for example, not favouring network based over market based solutions, or generator based solutions over demand response.

¹ AEMC, *Reliability Frameworks Review Issues Paper*, 22 August 2017, p42.

Proposed assessment approach (Q2)

PIAC supports the AEMC's proposed assessment approach for the review.²

PIAC stresses that, in assessing the range of options against the NEO and guiding principles, consideration should always be given to the holistic costs and benefits of any potential changes, not just the cost and benefits relating to reliability. For example, as the AEMC has identified, the provision of inertia services may provide market benefits in addition to reliability benefits.

Application of the reliability standard

PIAC understands that the reliability standard and settings are out of scope for this review. Nonetheless, as is noted in the discussion paper and is fundamental to a number of the issues raised, PIAC notes that how it is applied (and not applied) is of growing concern.

The AEMC notes that the reliability standard is somewhat intangible.³ PIAC agrees, and considers this may be a factor in how its application is interpreted differently by different stakeholders.

In PIAC's view, considering the standard as a value that should not be breached in any given year is unlikely to be conducive to outcomes that reflect a cost-reliability trade-off that consumers would choose.

It would be more appropriate to consider taking action where the standard is likely to be breached over a number of successive years in the interest of avoiding investments that come with considerable cost while providing little long-term benefit. Another approach may be to estimate the expected Unserved Energy (USE) over a number of years on a rolling average basis, rather than considering individual years at all.

PIAC supports the current reliability standard, and does not see merit in moving away from the value of 0.002% USE at this time. 0.002% USE represents a level of reliability that, given the cost trade-offs of higher reliability and the impact of lower reliability, is consistent with the Reliability Panel's principle of: "Delivering a level of reliability consistent with the value placed on that reliability by customers."⁴

In spite of this, PIAC is of the view that there has been little consideration of the Reliability Standard and the cost-reliability trade-off implicit in the 0.002% USE level. This is highlighted by the previous decisions of the Reliability Panel and some of the government interventions which have been proposed such as Snowy 2.0 and regarding Liddell power station.

Another way of understanding the impact on consumers of the price reliability trade-off is to consider the broader customer experience with outages.

The following is taken from AEMO's submission to the Finkel review, with numbers derived from the AEMC extreme weather events review.

² Ibid, p43.

³ Ibid, p19.

⁴ Reliability Panel AEMC, *Issues Paper. Reliability Standards and Settings Review 2018* 6 June 2017, 21.

Sources of Customer Interruption 2005-10

(AEMC)

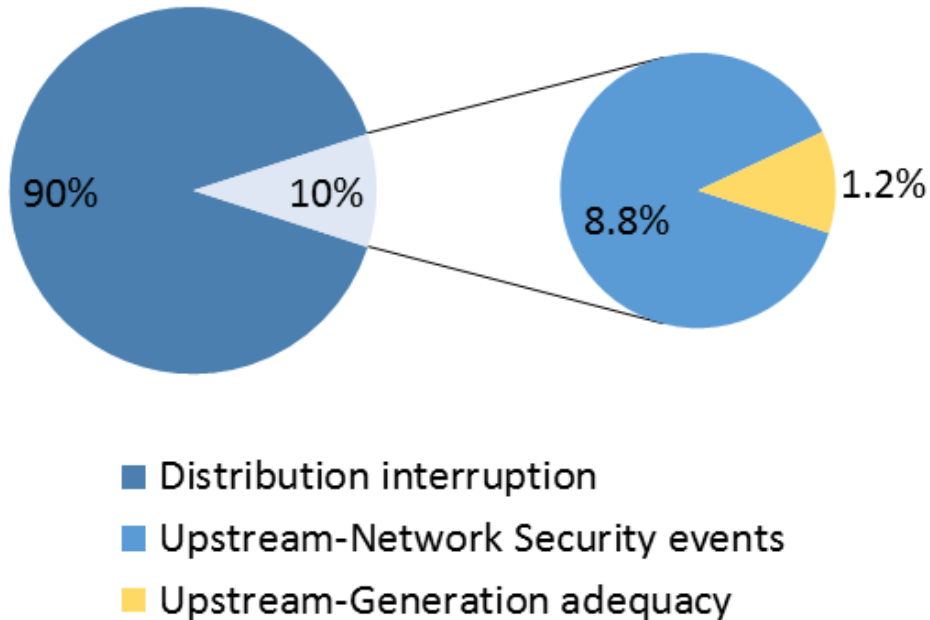


Figure 1: Sources of customer interruptions (Source: AEMO)

It illustrates that, historically, supply interruptions for distribution connected customers have mostly originated in their distribution network, with a smaller number in the transmission system, and a negligible portion as a result of generation shortfalls.

Even a doubling of interruptions from the transmission system, or ten times the number of outages in the generation system, would only increase total outages experienced by these customers by around 10%.

While maintaining system reliability and security is clearly important, this does suggest that even a significant increase in generator and transmission outages might have relatively little appreciable impact on these consumers. It also suggests that spending billions of dollars to improve reliability in generation and transmission may not bring commensurate benefits for these users.

With respect to distribution outages, consumers in regional areas are voicing that they are satisfied with their levels of reliability, are more concerned about affordability, and they are prepared to accept lower reliability as a way of controlling costs.

PIAC is deeply concerned that, if full regard to the cost impacts and consumer expectations is not given in developing new reliability measures, we will end up with a gold-plated wholesale market.

Demand Response in the wholesale market

In PIAC's view, any part of the energy system that does not fully deploy demand response (DR) where it is cost effective to do so, cannot be considered to be operating at an acceptable level of efficiency. This applies equally to distribution, transmission, wholesale, and retail.

PIAC agrees with the AEMC's assessment that demand response in other parts of the system is more prevalent, but maintains that allowing demand reduction to bid into the wholesale market, independently of energy purchasing arrangements, is increasingly essential if that market is to deliver efficiency outcomes that are in the long-term interest of all consumers.

Although retailers are able to engage in demand response if they choose to do so, the NEM remains a generation-only wholesale market. When compared to energy markets with effective mechanisms for demand response,⁵ the amount of DR in the NEM is trivial.

Hence, the introduction of a Demand Response Mechanism (DRM) was recommended by the AEMC in the 2012 Power of Choice review.⁶ Subsequently AEMO developed a rule change proposal to this end. In response to pressure from incumbent gentailers⁷ - who, as noted by the AEMC, face conflicting incentives which respect to DR and generation⁸ - AEMO did not lodge a rule change proposal for the DRM with the AEMC, instead deferring to SCER.

SCER opted to delay the reform by a year with (another) cost-benefit analysis. In 2014 when Ministers met again to consider a DRM, gentailers argued the reform would no longer be of benefit, due to declining demand and oversupply of generation capacity; a position proven short sighted by recent history.

In 2015, this resulted in a modified rule change proposal by COAGEC, for a DRM that was, by design, ineffective in that it gave retailers the right to disallow consumers from participating.

While AEMC could clearly not approve such a design, PIAC is disappointed to see the AEMC make this decision on the basis of analysis that was deeply flawed on a number of counts.

For example, in considering that rule change, the AEMC came to the conclusion that "retailers themselves offer, or are willing to offer, a range of products and services intended to capture a customer's demand response", citing estimates of more than 2,000MW of DR already in the market and painting a picture of an emerging demand side market requiring no intervention along with abundant reliable generators that provide capacity when needed.

In 2017 the reality paints a different picture. The involuntary load curtailment that blacked out some South Australian households in summer 16/17, made necessary by generator failures on the day, could have been avoided if just 100MW (3% of the South Australian load) was voluntarily

⁵ For example, over 10% of the WA energy market's capacity is sourced from demand response.

⁶ And at other times in the previous decade since, and including, the Parer review.

⁷ Retailers have repeatedly claimed that DRM implementation costs exceed \$100 million. These claims remain entirely unsubstantiated, have been questioned by independent experts and have not been subject to any meaningful due diligence, yet they have been treated seriously by the AEMC and others.

⁸ AEMC, *Reliability Frameworks Review Issues Paper*, 22 August 2017, 54.

turned off. By comparison, more than 10% of Western Australia's wholesale market capacity comes from demand response, as it is allowed to participate in the wholesale market.

The AEMC suggests that because retailers are exposed to high spot prices, this incentivises them to undertake demand response, so improving reliability.⁹ The South Australian example is one of many cases, however, where high spot prices are clearly not sufficient for retailers to undertake demand response.

AEMO is now procuring contracts under RERT for emergency demand response for the summer of 17/18. While this is a welcome development for maintaining reliability, it would have been made easier, or potentially entirely unnecessary, if a pool of active demand response was in place, as would be the case if the huge potential for demand response to respond to high wholesale prices was realised through a DRM.

Thus, in PIAC's view, the only effective DRM in the NEM would be one where independent demand response aggregators are allowed to operate in the wholesale energy market, and consumers are able to contract with them without the intervention of their retailer.

PIAC recommends a DRM be introduced, as a matter of urgency. Previously, a slow implementation has been considered for the convenience of retailers. However, given the price and reliability impacts on consumers that have resulted from the lack of a DRM during the past decade or more, and questionable information from gentailers has contributed to this delay, it is not appropriate to delay its introduction any further.

Households and demand response

The Issues Paper describes the role and options for demand response well, but notes that 'Consumption is difficult to shift from one period to another, particularly for residential consumers'.¹⁰

PIAC suggests that the AEMC reconsiders this view. While some loads cannot be shifted without compromise, many residential (and other) users have a number of substantial loads (including some appliances, pools, water heaters and so on) that, when aggregated, could be willingly shifted to aid better price outcomes.

Value of Customer Reliability

The Issues Paper provides useful commentary on the Value of Customer Reliability (VCR).¹¹

PIAC notes that in addition to the willingness to pay and/or accept, VCR studies should consider:

- the cost of alternate supply (such as batteries and generators), which may be less than what people might be willing to pay for USE from the grid otherwise.
- the value of partial supply, such as in the case where non-essential loads may be foregone for a period of time

⁹ Ibid 11.

¹⁰ Ibid 17.

¹¹ Ibid 18.

In the coming decade, batteries are expected to be deployed at scale and interact in the wholesale market in a number of ways.

- As battery products become prevalent and innovative, more are likely to be able to operate in islanded mode; and,
- Additionally, as more batteries are deployed, a great portion of the load on the grid will be interruptible battery charging loads, that have a much lower VCR than average.

Characteristics of generation

The Issues Paper provides useful commentary on the characteristics of generation.¹²

The paper states the wind energy is non-synchronous, however this is not entirely correct – many modern wind turbines have full power conversion and are synchronous, and some even support improved power quality in the grid.

Concerns about the Reliability Panel's approach to setting Market Price Cap and Cumulative Price Threshold

As noted above, PIAC is of the view that 0.002% USE represents an appropriate target for reliability, given the cost of higher reliability and the impact of lower reliability.

By the same token, PIAC is concerned that, in setting the MPC and the CPT in the past, the reliability standard appears not to have been applied in a way that is at all consistent with the Reliability Panel's own guiding principle of "Delivering a level of reliability consistent with the value placed on that reliability by customers",¹³ where this level of reliability is understood to be the reliability standard.

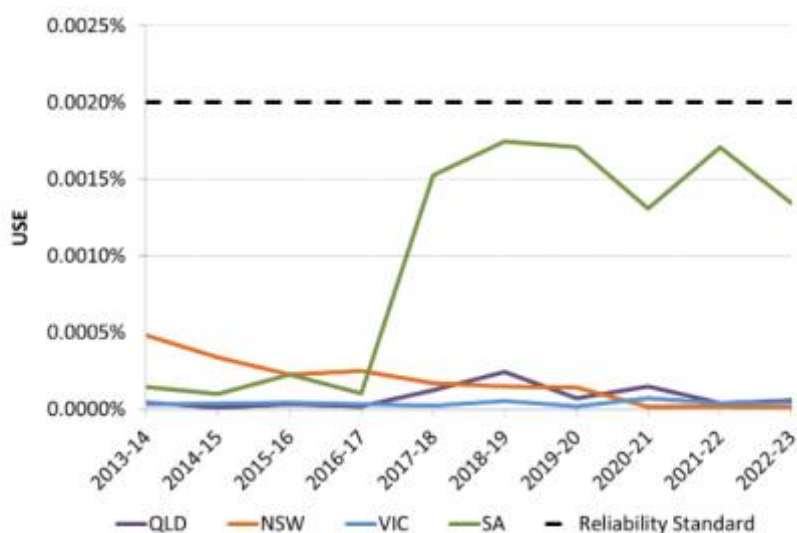
As illustrated in its 2014 review, modelling commissioned by the Panel¹⁴ clearly concluded that, in all NEM regions except for SA, the reliability levels under the price settings in place at the time were forecast to be in the order of ten times higher than the standard,¹⁵ suggesting the MPC and CPT could be lowered considerably and still the reliability standard would be achieved:

¹² Ibid 33.

¹³ Reliability Panel AEMC, *Issues Paper. Reliability Standards and Settings Review 2018* 6 June 2017, 21.

¹⁴ Roam Consulting, *Reliability Standard and Settings Review ROAM Consulting Modelling Outcomes*, <http://www.aemc.gov.au/getattachment/c1206b00-86ba-4efe-a9ca-1d4d249fb612/ROAM-Presentation-4-December-2013.aspx>.

¹⁵ As in the predicted USE, under the settings in place at the time, was forecast to be about one tenth of the standard in all regions except SA.



Stage 2 Market Development Outcomes

- The reliability standard is not exceeded in any region
- The highest level of USE occurs in South Australia

Figure 2: Reliability Standard and Settings Review, ROAM Consulting Modelling Outcomes, presented 4th December 2013 (Slide 34)

In spite of the Panel's commissioned analysis showing ample opportunity to adjust the price settings downward while remaining within the limit of the Reliability Standard, the Panel decided to not to adjust the MPC or CPT downwards. It is unclear what, if any, connection existed between the expert advice the panel had commissioned, the prevailing market conditions, and the Panel's decision.

In PIAC's view, this reflects the broader risk that the wholesale market is effectively being 'gold-plated', with a much higher level of reliability than consumers are prepared to pay for.

The function of Market Price Cap is changing

PIAC notes that the Panel views the primary role or function of the MPC to be setting efficient price signals, and a secondary function to be managing participant exposure to price risk.

The Market Price Cap as an investment signal is less relevant

PIAC considers that the notion that the Market Price Caps are influential in sending a signal for new investment may be increasingly outdated and needs to be reconsidered.

In the context of the historical, current and anticipated changes in the National Energy Market, the MCP has become much less a factor in the investment decisions of generation businesses than when it was first established.

Since the establishment of the MCP, a number of other factors (high demand forecasts, low demand forecasts, oversupply, fuel prices, renewable energy incentives, the lack of long term

carbon policy to name a few) have all played an increasingly material part in incentivising (and disincentivising) new investment.

New markets (such as for frequency response and inertia) will also incentivise future investment, further diminishing the role of MPC in signalling to investors. Further, governments are investing in energy generation and storage to maintain reliability, and are unlikely to alter these decisions on the basis of the level of the MPC of CPT.

Accordingly, PIAC has recommend to that they Panel reconsider the primacy of the MCP as an investment signal.

The Market Price Cap for managing exposure to risk is more relevant

As the Panel notes:

Over the last 6 years, the investment decisions that related to scheduled generation have principally been to withdraw capacity. It follows that an assessment of the market price cap should consider the effectiveness of the setting to the decisions of existing generation.¹⁶

Notwithstanding that high wholesale energy prices will also occur at times in a well-functioning and balanced market, PIAC is concerned that many high price events, including in the current 2016-2020 period, have been caused or exacerbated by strategic bidding behaviour, and even gaming, by existing generators.

Irrespective of the cause of this disparity, the Panel itself notes that

In 2016, the relationship between price and demand in South Australia is weaker; high prices regularly occurred at levels of demand as low as 1,000 MW.¹⁷

In this context, in PIAC's view the function of the MPC to manage participant exposure to price risk should be considered paramount.

New energy service markets introduce new incentives, suggesting lower energy-based price settings

A number of rule changes and reviews in train point to the likelihood that there will be new markets for reliability services introduced in coming years. These markets may include:

- a market for inertia (either as a wholesale ancillary services market, a secondary market created by new inertia obligations on TNSPs, or both);
- new frequency ancillary services markets;
- a market for emissions reductions; and,
- markets for demand response.

The development of these new markets will, importantly, send financial signals for investment in the services that are valued in the system at a given time and, in some cases, location.

¹⁶ Reliability Panel, above n1, 26.

¹⁷ Ibid 31.

Some services, particularly inertia, have historically been provided by generators that are paid through their participation in the wholesale energy market, with behaviour and investment influenced by the MPC and CPT accordingly.

In PIAC's view, it is appropriate that as markets evolve to reward the services that are most needed in the system, it is efficient and cost-reflective to shift some of that cost-recovery from wholesale energy to new markets.

In PIAC's view, this entails considering whether the MPC and CPT should be lowered to rebalance these incentives as markets for new services are introduced.

Different reliability approaches for different regions

The above analysis undertaken for the RP for the 2014 review, and the outcomes since, have made it clear that only a couple of regions have come, or are likely to come, close to having the Reliability Standard unmet over the longer term.

In PIAC's view, it is inconsistent with the intent of the price settings, and functions of the price settings, to maintain a common MPC across all jurisdictions. While there is some link between wholesale prices in neighbouring jurisdictions, constraints in interregional trading and the lack of coincident price peaks between regions would appear to limit the extent that would efficiently act as an investment signal.

Further, it is possible that the lack of distinction between regions with respect to MPC and CPT has led to the perverse outcome of favouring investment in regions that are less in need of generation capacity to meet the reliability standard.

In any case, wholesale prices have clearly differed, over the long term, between jurisdictions. The reasonable expectation that price outcomes over such different ranges would naturally be expected to have different upper and lower bounds, reinforces the need consider setting different prices in different regions.

PIAC has recommended that the Reliability Panel consider setting different MPC's and CPT's in different regions. This could also be considered for other reliability measures.

Continued engagement

PIAC welcomes the opportunity to meet with the AEMC and other stakeholders to discuss these issues in more depth. Please contact Craig Memery, Energy and Water Policy Team Leader on +61 2 8898 6522 or by email cmemery@piac.asn.au.