



public interest
ADVOCACY CENTRE

PIAC response to Consultation on draft metrics for Strategic Energy Plan

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About the Public Interest Advocacy Centre

The Public Interest Advocacy Centre (PIAC) is an independent, non-profit legal centre based in Sydney.

Established in 1982, PIAC tackles barriers to justice and fairness experienced by people who are vulnerable or facing disadvantage. We ensure basic rights are enjoyed across the community through legal assistance and strategic litigation, public policy development, communication and training.

Energy and Water Consumers' Advocacy Program

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

- NSW Council of Social Service;
- 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 NSW;
- Tenants Union;
- The Sydney Alliance; and
- Mission Australia.

Contact

Miyuru Ediriweera
Public Interest Advocacy Centre
Level 5, 175 Liverpool St
Sydney NSW 2000

T: (02) 8898 6525

E: mediriweera@piac.asn.au

Website: www.piac.asn.au



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The Public Interest Advocacy Centre office is located on the land of the Gadigal of the Eora Nation.

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Introduction

PIAC welcomes the opportunity to respond to Energy Security Board's (ESB) consultation paper on the draft metrics for Strategic Energy Plan (SEP), which the annual Health of the NEM will report against.

We agree with the ESB that "it is essential that tangible metrics which track progress against the Strategic Energy Plan are identified and agreed." We also support the ESB's assertion that "the metrics are not intended to act as implicit goals or targets in and of themselves. Rather, they are intended to act as a transparent and independent set of measures by which progress) or otherwise) can be measured and reported on a consistent and replicable basis."¹

This submission identifies PIAC's priority issues for inclusion in the SEP metrics, the final section proposes amendments to the draft metrics.

Issues for inclusion in SEP metrics

Risk allocation in the NEM

The NEM is in the middle of a transformation from an energy system relying primarily on centralised, fossil-fuel generation with passive demand, to one with a low- or zero-emission generation fleet interacting with more sophisticated and active demand-side behaviour. The uncertainty in demand growth, the cost trajectories of new technologies and the potential for new 'game-changing' technologies places greater importance on the way risk is allocated between businesses, governments and consumers.

Risk should be allocated so that those exposed risks to have the ability and incentive to manage them. This is particularly important in the regulated network segments of the energy supply chain. Under the current regulatory frameworks, any network investment costs have been borne by consumers – i.e. socialised – by a regulated fee regardless of actual asset utilisation or benefits accrued. Despite recent improvements in engagement and consultation practices, consumers still have very limited input in major network investment decisions including their timing and cost. Under this framework, consumers bear all of the risk of inefficient network investment once the expenditure is approved.

PIAC does not consider this to be an appropriate allocation of risk. Instead, risk should be shared between consumers and businesses based on an assessment of which party has the ability and incentive to manage it. PIAC is actively engaged in the AEMC's *Coordination of generation and transmission investment* review and other processes where these issues are being considered, and is developing new market and regulatory models that address the issues of appropriate cost recovery and risk sharing.

However, to ensure that risk allocation is appropriate in the NEM, both now and in the future, PIAC contends that the SEP metrics should include specific measures of appropriate risk

¹ ESB, *Consultation Paper on Strategic Energy Plan draft metrics*, February 2019.

allocation and compensation in each segment of the energy supply chain. Proposed amendments to this effect are included in the next section.

Reliability and affordability

PIAC concurs with the ESB that the reliability of the energy system should be central to monitoring in the NEM. However, we contend that this monitoring should focus on the interaction between reliability and consumer preferences; specifically, the consumer preference for a system that provides affordable access to an essential service.

Energy consumers are currently struggling to afford high energy bills. A combination of high wholesale electricity prices, high gas prices and long-term growth in network charges has meant that consumers have faced unusually high bills in recent years. Recently, the ACCC noted that “High prices and bills have placed enormous strain on household budgets and business viability. The current situation is unacceptable and unsustainable”.² PIAC agrees. In this context, consumers should not be expected to pay for expensive reliability improvements they do not want.

Generation and transmission reliability

The trade-off between reliability and affordability is relevant to both the wholesale and network segments of the energy supply chain. In generation and transmission, there has been a high degree of political focus on reliability in recent years. However, new measures to incentivise capacity may not reflect consumers’ willingness to pay. PIAC has recently addressed this issue in a submission to the AEMC’s Reliability Frameworks Review:

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

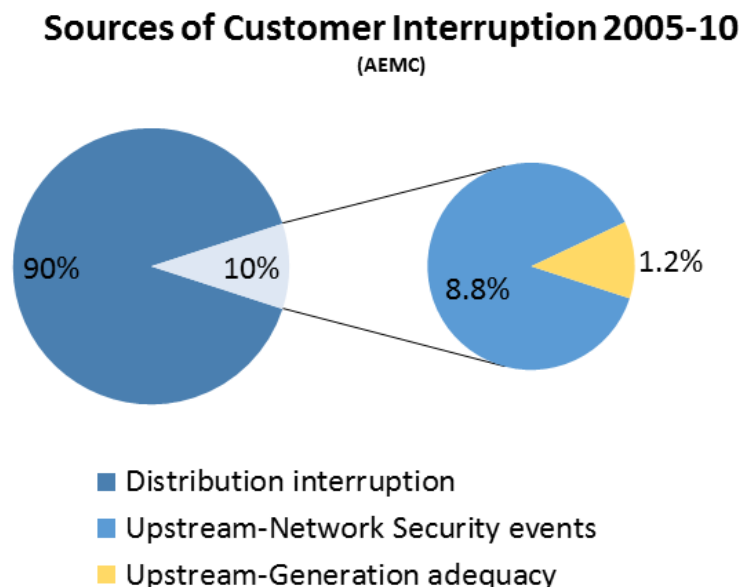


Figure 1 Sources of customer interruptions (Source: AEMO)

² ACCC, *Restoring electricity affordability and Australia’s competitive advantage*, June 2018, iv.

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.³

Distribution reliability

In distribution networks, too, there is need to ensure that reliability measures are commensurate with consumers' willingness to pay. Currently, consumers in some NEM regions are paying for inefficient network investments driven by high reliability standards and performance.⁴ At a time when energy prices are of great concern to the community, this is not acceptable.

Value of Customer Reliability

To ensure that consumers do not pay more than they are prepared for reliability across the energy supply chain, it is necessary to have an accurate measure of how much consumers value it; value of customer reliability (VCR).

In recent years, VCR has been applied in circumstances, and at a level of granularity, for which it was not anticipated or designed. This highlights the need for a detailed and adaptable set of VCR values that are designed to be applied in a variety of circumstances. Any future work on VCR will need to respond to these developments and be done with cognizance of the applications of VCR. It therefore critical that the effectiveness of VCR at reflecting consumer preferences be assessed over time.

SEP metrics should include specific measures of the reliability/affordability interaction

The ESB should include metrics to measure whether reliability reflects consumer preferences across the energy system, and specifically with regard to VCR. Proposed amendments to this effect are included in the next section.

Demand response in the NEM

In PIAC's view, any part of the energy system that does not fully employ demand response (DR) where it is cost effective to do so, cannot be considered to be operating efficiently. As demonstrated by Figure 2, this applies equally to wholesale, transmission, distribution and retail. Therefore, it is necessary to track the degree to which DR is employed across the whole system to assess the health of the NEM.

³ PIAC, [But what's the USE?: Submission to AEMC Reliability Frameworks Review Issues Paper](#), September 2017, 5-6.

⁴ For instance see: Grattan Institute, [Down to the wire: A sustainable electricity network for Australia](#), March 2018.

Stage in supply chain	Wholesale and system operation	Transmission	Distribution	Retail	Customer (behind the meter)
Role of DR	<ul style="list-style-type: none"> Alternative to expensive generation to meet peak demand Provide system security Provide ancillary services 	<ul style="list-style-type: none"> Avoid or defer capital investment Cost effective alternative to expensive interconnection investment 	<ul style="list-style-type: none"> Avoid or defer capital investment Provide power quality support 	<ul style="list-style-type: none"> Manage wholesale market exposure Manage retail market exposure 	<ul style="list-style-type: none"> Reduce consumers' electricity costs Provide backup supply during outage
Necessary reforms or outcomes	<ul style="list-style-type: none"> Demand Response Mechanism (that is independent of retailers) 5 minute settlement 	<ul style="list-style-type: none"> Offering DR to consumers Provide products to allow consumers to self-select their cost-reliability level Ringfencing arrangements and network incentives to support DR 	<ul style="list-style-type: none"> Offering DR to consumers Network tariffs for DR Provide products to allow consumers to self-select their cost-reliability level Ringfencing arrangements and network incentives to support DR 	<ul style="list-style-type: none"> Pass on network tariffs and products for DR Provide products to allow consumers to self-select their cost-reliability level Offer retail DR products for wholesale price arbitrage 	<ul style="list-style-type: none"> Consumers are able to self-select cost-reliability trade-off Allow aggregation of individual consumers to provide DR portfolio
Essential	Coordination of services and products to overcome split-incentives and barriers to efficient use of DR				

Figure 2 - The role of demand response in each part of the energy market and system

Proposed Metrics

This section addresses the proposed metrics in turn in a series of tables, proposing amendments where PIAC suggests them.

The amendments are in **red text** for ease of identification. We have also provided comments to explain why we have proposed these amendments.

Affordable energy and satisfied consumers

Objective	PIAC's proposed amendments to the draft metrics	PIAC comments
<p>Energy is increasingly affordable for all consumers, supported by adequate consumer protections and access to dispute resolution</p>	<ul style="list-style-type: none"> • Spread of representative domestic retail tariffs in each NEM-region (with numbers of customers on each tariff) • Number of consumers on tariff offers that are below the efficient cost of provision • Energy spend as a % of household disposable income • Customer perceived value for money • Number of consumer disputes/complaints resolved by retailers and ombudsman schemes • Low-income high-cost: Number of households with income below poverty line (or alternatively lowest income quintile) which spend above the median level on energy. • Representative C&I energy prices. Comparison with international counterparts 	<ul style="list-style-type: none"> • The range of retail tariffs matters as much as a single representative tariff. However, it is also crucial to know the proportion of consumers who are on any particular tariff, in a calculation of overall affordability, particularly when many tariffs may be 'place holders' and not functionally be impacting consumers. • Any below cost tariff offers (and the costs imposed by the proportion of the market that receive them) impact negatively on the affordability (and efficiency) of the tariffs offered to the remainder of a retailer's customers, which is important where price dispersion is wide, and not transparent. • It is important to track how successful retailers and ombudsman schemes are at resolving disputes, not just tracking the number of disputes and complaints. In addition, this metric must be corrected for any expansion of the scope of ombudsman schemes (such as for including embedded network operators or behind the meter services and products)
<p>Consumers are empowered to manage their demand and can access distributed energy and energy efficiency solutions</p>	<ul style="list-style-type: none"> • % customers with smart meters • Ratio of demand response MWs available/annual peak demand • Participation in energy efficiency programs • Economy wide energy intensity: energy consumption/GDP 	<ul style="list-style-type: none"> • Agree that DR from C&I customers should be excluded from these metrics as the objective relates to empowering consumers • The calculation of DR available must include availability across the whole energy system including <ul style="list-style-type: none"> ○ Wholesale ○ Network ○ Emergency DR such as for RERT • Economy-wide energy intensity is driven by many other factors outside of the remit of the energy sector. While it is a useful metric for economic

		analysis, it is not a very useful measure for the objective of empowered consumers
<p>Consumers are able to easily identify and secure the best deal for their circumstances</p>	<ul style="list-style-type: none"> • Consumer confidence in ability to make choices about energy products and services • % customers on best three market offers by retailer • % consumers on expired market offers and offers that exceed the efficient costs to serve. • % of consumers on offers that are at or below efficient cost to serve (interacting with a properly functioning default price) • # unique hits on government supported energy comparison websites and number of visitors that complete a search plan. • How easy it is to switch (e.g. 'customers can switch in 5 clicks or less and change retailers in less than 2 business days'). Most appropriate metric TBD. 	<ul style="list-style-type: none"> • Consumer confidence is useful but should not be taken as an accurate indication of ability to achieve the best outcome. Research indicates that overestimation of our ability is common, particularly in areas of unfamiliarity or information asymmetry (such as those that are a fundamental feature of the retail energy market). Accordingly, confidence is secondary to an assessment of actual outcomes for consumers. • The implementation of a default offer is crucial here, particularly that it closely approximate the efficient cost to serve (including a benchmarked retail margin, but not explicitly allowance for customer acquisition and retention). The setting of this price allows effective metrics that can monitor both the performance of the market in delivering efficient prices, but also provide an objective measure of consumers ability to identify deals that respond to their circumstances and choices. • It is problematic to try and objectively and consistently defining what the "best market offer" is. What is "best" depends on many factors unique to each consumer including load profile and personal preferences. An alternative may be to measure the proportion of consumers on offers that are at or below the efficient cost of service provision. • Measuring the ease of switching must also include the time taken to switch retailers.

<p>Vulnerable consumers are on suitable pricing plans, receiving concessions when needed, and can benefit from distributed energy and energy efficiency schemes</p>	<ul style="list-style-type: none"> • % hardship customers on best market contracts or contracts priced at (or below) the efficient cost. • % people who are eligible for concessions on concessions • % public housing with access to energy efficiency, solar and/or storage programs. • % of hardship and/or payment support customers successfully transitioned off hardship and payment support • % of hardship/payment support customers unable to service the cost of their safe/health/essential usage 	<ul style="list-style-type: none"> • As discussed above, determining the “best” market contract is problematic, efficient cost offer would be a preferable indicator. • There should be caution in assuming that ‘success’ involves customers transitioning off support or assistance programs. For a significant minority of ‘hardship’ customers, ongoing support of some kind is likely to be necessary, regardless of how effective it is, and it is important that the metrics do not encourage these people to be transitioned off support programs that are in their best interests. However, it will be important to quantify this cohort in order to inform the most appropriate way of ensuring their ongoing access to essential electricity services (which may not be though retail assistance programs in the longer term).
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Secure electricity and gas system

Objective	PIAC's proposed metrics	PIAC comments
Markets operate safely, securely and efficiently, under full range of operating conditions, with minimal intervention	<ul style="list-style-type: none"> • Number and nature of electricity supply interruptions due to system security concerns • Number, duration and reason for electricity system interventions by AEMO in each NEM-region • Hours high pressure gas pipeline not operational (available NSW only). 	<ul style="list-style-type: none"> • PIAC supports these metrics.
System planning and development is informed by clear and transparent rules	<ul style="list-style-type: none"> • Number Effectiveness of adaptation processes in place to upgrade energy infrastructure to deal with increasingly severe weather events and cyber-security risks 	<ul style="list-style-type: none"> • The effectiveness of any adaptation processes is a more important measure than the number. Defining how to measure effectiveness is crucial and could consider factors such as the number of modes of weather-related or cyber-security failure which are guarded against.

Reliable and low emissions electricity and gas supply

Objective	PIAC's proposed metrics	PIAC comments
<p>Electricity and gas sectors efficiently deliver at least their share of emissions reduction target/s while ensuring reliable supply</p>	<ul style="list-style-type: none"> • Electricity and gas sector emissions as a proportion of national emissions. • Compare sectoral emission reduction with economy wide target/s • Amount of unserved energy (with reference to reliability standard and consumers' willingness to pay for reliability such as estimated by an accurate VCR) • Amount of RERT capacity procured by type (long notice vs medium notice vs short notice) and number of times deployed • Total cost of RERT (\$) compared to the cost of the cost of building out the potential event which caused the RERT to be activated 	<ul style="list-style-type: none"> • While the RERT and other market interventions can be expensive, it is important to put this in context against the cost of building out the potential event which caused the RERT to be activated (eg: the cost of RERT procurement vs the cost of transmission upgrade or additional generation investment) • PIAC is deeply concerned that, if full regard is not given to cost impacts and consumer expectations in developing reliability measures, we will end up with a gold-plated wholesale market
<p>Investors efficiently manage risk to support investment, operation, retirement and innovation decisions</p>	<ul style="list-style-type: none"> • Mean percentage error of AEMO annual operational consumption forecast vs actual • % announced closures by scheduled and semi-scheduled generators made with at least three years' notice. • Committed investment in electricity generation capacity by region and forecast supply adequacy • Investment in domestic gas resources and forecast gas supply adequacy 	<ul style="list-style-type: none"> • PIAC supports these metrics.

Effective development of open and competitive markets (where appropriate)

Objective	PIAC's proposed metrics	PIAC comments
Wholesale and retail markets are competitive and deliver efficient outcomes for consumers	<ul style="list-style-type: none"> • Average forward swap and cap contract prices for electricity in line with LRMC of new entrant, by region where available • Retail and wholesale contract gas prices reflect netback/export parity plus transport and other relevant costs. • Extent to which competition in the wholesale electricity and gas markets is identified as an issue by the AER. • 	<ul style="list-style-type: none"> • PIAC supports these metrics.
Deep, liquid and transparent financial markets for electricity and gas and related services	<ul style="list-style-type: none"> • Ratio of contract volume (both volumes traded and open interest) to demand for electricity and gas • Gas trading volumes for commodity and transportation • Liquidity of east coast gas pipeline capacity 	<ul style="list-style-type: none"> • PIAC supports these metrics.
Access to efficiently priced fuel and transport	<ul style="list-style-type: none"> • Transparency of fuel reserves and prices (coal, gas, hydro) for market participants • Coal costs competitive with international spot price less shipping • Ability for gas shippers to access arbitration over gas transport costs 	<ul style="list-style-type: none"> • The negotiate-arbitrate access regime for gas pipelines is broadly appropriate. However, it is currently prohibitively expensive, even for very large customers, to access arbitration. The ESB should measure the effectiveness of reform to address this such as the AEMC's <i>Review of economic regulation applied to covered pipelines</i>.
Innovation is incentivised and enables value from new technologies	<ul style="list-style-type: none"> • Value of system security markets (e.g. FCAS) • Proportion of energy and system security services provided by DR and DER • Number of projects and amount of funding for RD&D by governments 	<ul style="list-style-type: none"> • Spending on R&D is an imperfect measure of innovation as there must also be a transfer from trial and pilot projects to business-as-usual.

Efficient and timely investment in networks

Objective	PIAC's proposed metrics	PIAC comments
Investment solutions are optimal across all resources	<ul style="list-style-type: none"> • Congestion levels on electricity transmission/distribution networks and gas pipelines • Extent to which congestion is being examined through RIT-T/Ds • Cost of inter- and intra-regional constraints • % customers with retailer exposed to cost reflective network tariff • Average generation connection time from project commencement • Proportion of network investment met or deferred by DR and DER (i.e.: non-network solutions) 	<ul style="list-style-type: none"> • We do not consider it necessary to measure the extent to which congestion is being examined through RIT-Ts or RIT-Ds. This is presumably part of the AEMC's last resort planning power review. • We support metric looking for retailers exposed to cost-reflective network tariff as the retailer does not necessarily have to pass the same network tariff on to the actual consumer. • In addition to DER's contribution to wholesale (as part of the outcome seeking the effective development of open and competitive markets), it is important to also track its use by network businesses as an alternative to traditional network investment.
Efficient regulation of monopoly infrastructure	<ul style="list-style-type: none"> • Regulated rate of return for new network investments relative to other regulated industries and risk free rate of return (e.g. 10 year Commonwealth Government security yield) • Network productivity, utilisation, and reliability • Network reliability standards, incentives and performance do not exceed what consumers are prepared to pay for • Customer engagement of network service providers 	<ul style="list-style-type: none"> • To ensure that network expenditure remains prudent and efficient, it is essential that the regulatory standards and settings which drive network behaviour and investment decisions remain linked to consumers' willingness to pay.
Networks incentivised to be efficient platforms for energy services	<ul style="list-style-type: none"> • Extent to which DER is able to participate in relevant markets – wholesale, ancillary services, deferral in network investment • Progress towards implementing a DER coordination framework • % customers with retailer exposed to cost reflective network tariff to ensure that all DER consumers are paying an equitable share of network costs 	<ul style="list-style-type: none"> • Current (non-cost-reflective) network tariffs involve inequitable cost allocation between DER and non-DER consumers. Consumers with DER avoid paying network costs during the day (through self-consumption of solar) but often still contribute to consumption at peak times.

	<ul style="list-style-type: none"> • Time taken to assess network investment proposals in line with best practice international regulatory processes. 	
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Strong but agile governance

Objective	PIAC's proposed metrics	PIAC comments
Governance arrangements support the achievement of the national energy objectives, and emerging issues are addressed in a coordinated, timely and consultative manner	<ul style="list-style-type: none"> • Energy market institutions have published and co-ordinated priorities, work programs and outcomes • Market bodies' outcomes in line with their statements of expectations • Rule change requests processed within standard timeframes • Number of regulatory sandboxes utilised to trial new regulatory approaches. 	<ul style="list-style-type: none"> •