NEM 2.0: balancing the energy trilemma

Response to the Independent Review into the Future Security of the National Electricity Market

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Executive Summary

The Independent Review into the Future Security of the National Electricity Market provides an opportunity to recommend changes that support innovation in response to the transformation underway in Australian energy markets. Currently the energy market favours incumbents at the expense of competition from emerging players.

The creation of the NEM has only been a partial transition from energy being the domain of state governments. As a result, it is an inconsistent mix of roles and responsibilities across state and Commonwealth governments, state and Commonwealth laws and regulations, public and private operators of generation, and networks and retailers. Compounding this complexity is the fact that there are different levels of accountability and customer participation in each of these areas.

In this submission PIAC outlines some systemic weaknesses of regulatory and market outcomes. In PIAC's view, there is an urgent need to deregulate, consolidate and reduce complexity in order to enhance competition. PIAC believes partial changes are unlikely to address the systemic weaknesses, especially the unbalanced nature of the rule making. The changes must be accompanied by enhanced consumer representation, as well as making governance arrangements more democratic, transparent and accountable.

Another area of concern is recent evidence that the retail component of an energy bill is higher in deregulated retail markets compared to regulated markets. This could indicate that operating in a competitive market is very expensive, or that the competitive market is ineffective. PIAC considers it vital that the operation and outcomes of the competitive market are effectively monitored, to ensure they are in the long-term interests of consumers. By tracking price movements, and the movements in cost components such as green schemes, energy market institutions should be able to determine whether increases in retail costs are cancelling out lower costs in other areas of the energy price cost stack.

Demand management must also be considered a key part of a secure, clean and affordable energy system. PIAC considers that the incentive scheme and allowances should include transparency and public reporting requirements to improve accountability for the amount of demand reduced. PIAC outlines a number of concerns about cost reflective pricing, not least that the customer impact of cost reflective pricing has not effectively been considered. PIAC recommended that the networks use the next two years to begin discussing cost reflective tariffs with customers and run relevant trials. It will be vital to understand why this has not been done, and to identify and eradicate barriers.

PIAC, based on its experience in energy markets, provides examples of gaps and limitations in the current system, and suggests paths toward models and systems appropriate to a changed, and evolving, energy landscape.

Introduction

The Public Interest Advocacy Centre (PIAC) is an independent, non-profit law and policy organisation that works for a fair, just and democratic society, empowering citizens, consumers and communities by taking strategic action on public interest issues.

PIAC's Energy + Water Consumers' Advocacy Program (EWCAP) has been representing the interests of low-income and other residential consumers of electricity, gas and water in New South Wales since 1998.

PIAC welcomes the opportunity to provide input to the Independent Review into the Future Security of the National Electricity Market and to do so on the basis of 19 years of experience in advocating on behalf of residential consumers.

The consumers PIAC represents are keen to see Australian Energy Markets evolve to meet the challenges of the current century and facilitate access to innovative energy services.

In our submission, we address the questions that are relevant to our work in the sector.

Technology is transforming the energy sector

1.1 How do we anticipate the impacts, influences and limitations of new technologies on system operations, and address these ahead of time?

1.2 How can innovation in electricity generation, distribution and consumption improve services and reduce costs?

PIAC is concerned that currently the energy market institutions and the governance of Australian energy markets favour incumbents, at the expense of competition from emerging players. Given the transformation underway in the Australian energy markets, this review provides an opportunity to recommend changes that support innovation and avoid entrenching outdated systems and business models.

PIAC considers it critical that the overriding objective of reform related to innovative technologies and distributed energy resources (DER) should be to expand the reach of competitive markets for contestable services and to restrict the reach of monopoly regulated businesses. PIAC outlined its position in this regard in a joint report by consumer organisations, *Networks and batteries: small consumer groups' position paper*.[1] PIAC believes that reform based on this principle will ensure that innovative technologies improve services and reduce costs.

From the perspective of new entrants into the DER market, including prosumers and microgrid proponents and energy management system (EMS) and trading platform developers, choice and

[1] Total Environment Centre, *Networks and Batteries: small consumer groups' position paper*, available online https://d3n8a8pro7vhmx.cloudfront.net/boomerangalliance/pages/434/attacments/original/1476423462/N_B_position_paper_30_Sept_2016_.pdf?1476 23462

control are key, as noted by KPMG in its paper on residential batteries.[2] To maximise the positive effect on cost and service it is critical to ensure a competitive and dynamic market rather than one controlled by monopolistic networks. For example, while structural separation cannot (currently) be enacted, PIAC is of the view that ring-fencing needs to be as robust as possible, and in particular should contain strong measures around monitoring, transparency and compliance, so that consumers can have confidence that the guideline is being strongly enforced.

The challenge is to promote contestability and minimise any capital expenditure bias in a way that does not overly restrict networks from investing in or facilitating the rollout of energy storage on either side of the meter. For example, at the edge of the grid a competitive market may never develop, and the network may be best placed to invest in storage.

Additionally, the current framework is not sufficiently flexible when it comes to anticipating the impacts of new technologies, or facilitating a positive impact on service and costs. One example is the lack of a mechanism that enables local electricity generation and consumption to pay lower network charges than those paid for consumption of centralised generation. This would offer an alternative to behind the meter solutions, and to the establishment of embedded privately operated networks within the distribution network. It maintains utilisation of the network, which is in everybody's interest, and avoids the duplication of infrastructure.

The Local Generation Network Credit (LGNC) rule change was designed to improve the financial viability of a range of decentralised energy projects involving local councils, shopping centres, office buildings, apartments, precinct scale co- and tri-generation, community energy and aggregated small scale solar and storage. PIAC joined the proponents in calling upon the AEMC to contribute to the data pool and assist in providing the necessary evidence-base to make an informed decision.

The AEMC rejected the LGNC rule change proposal and stated that existing provisions for network support payments, combined with cost reflective tariffs, are sufficient to incentivise efficient local generation. The proponents encouraged the AEMC to consider the broader problem identified, in the hope that the AEMC would recognise the principle of local use of the system. Despite its power to make a 'more preferable rule', the AEMC refused to do so.

In PIAC's view, this warrants further consideration. We disagreed with the AEMC's interpretation of the scope of the rule-change, and with the scope of economic modelling it carried out.[3] The Institute of Sustainable Futures produced further evidence indicating that incentivising local renewable generation is economically efficient and environmentally responsible. This was reinforced by more recent research from Energeia for the ENA/CSIRO Network Transformation Roadmap, which forecasts higher economic benefits from networks buying services from prosumers.

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2 KPMG, *Consumer experiences and future developments: a report for Energy Consumers Australia*, December 2016, available http://www.energyconsumersaustralia.com.au/documents/KPMG-Residential-PV-customer-experiences-and-future-developments.pdf

3 PIAC, *Local Generation Network Credits Rule Change – PIAC submission to AEMC draft determination*, 16 November 2016, available at https://www.piac.asn.au/wp-content/uploads/2016/11/16.11.16-PIAC-LGNC-submission-.pdf

Overall, PIAC considers there is a clear case for action in relation to the current regulatory framework and governance arrangements. The LGNC and energy contestability work are just a couple of examples of how innovation could reduce costs, but also how the current framework does not allow for this to eventuate.

Consumers are driving change

2.1 How do we ensure that consumers retain choice and control through the transition?

A key focus of recent reforms has been to increase consumer choice. The hope is that choice will empower consumers to manage their energy use and put pressure on the competitive market to drive prices to an efficient level. There are issues with the assumption that choice and competition lead to better outcomes for consumers that PIAC considers relevant to the Finkel review. We raise this further below in relation to how to measure competition and rising retail process in deregulated markets. In addition, there are consumers who, due to the nature of their service, are unable to access the competitive retail market and the choice that it provides.

Customers of embedded networks and stand-alone energy systems are usually unable to choose a retailer and are instead served by a single network/retailer. In the case of stand-alone systems, the generator is an all in one provider. PIAC raised its concerns in recent submissions to the COAG Energy Council on stand-alone energy systems and consumer protections for behind the meter services. In principle, PIAC believes that customers whose primary energy supply is provided by an embedded network or behind the meter service should be afforded the highest level of consumer protections. This includes having access to external dispute resolution, a retailer of last resort, concessions and hardship programs and, where possible, a retailer of choice.

Access to external dispute resolution has increasingly become an issue of concern for customers with behind the meter products, in embedded networks and in stand-alone systems. A recent report commissioned by the ombudsman schemes of Victoria, New South Wales and South Australia outlined the key issues and potential solutions for ensuring access to external dispute resolution in a changing market.[4] PIAC reiterates its support for the jurisdictional energy ombudsman schemes as the most appropriate avenue for delivering dispute resolution in this area. There is support for this in relation to exempt sellers, and this would be an extension of those developments.

Consultation with state energy ombudsman schemes will be vital to the design of an appropriate funding mechanism to enable dispute resolution services to be made available to customers of stand-alone systems. PIAC understands that the Energy and Water Ombudsman (Victoria) is developing a scalable membership fee and different membership categories to ensure that exempt sellers are able to become members.[5] This may be an appropriate model to adopt for

[4] Benvenuti, J. and Whiteman, C. *A report to Energy and Water Ombudsman (Victoria) Energy & Water Ombudsman NSW, Energy and Water Ombudsman (SA). Consumer access to external dispute resolution in a changing energy marke*t. June 2016.

[5] D'Souza J., *General Exemption Order* Draft Positions Paper, Department of Environment, Land, Water and Planning (VIC), 2016, 5 & 9-10.

stand-alone systems that are non-network owned. The obligation to become a member could be a condition of the license that scheme operators or owners are required to have.

2.2 How do we best meet the needs of vulnerable and hardship consumers?

Reforms to tariff structures already under way aim to shift electricity costs and benefits across households in New South Wales. In order to ensure these changes do not inadvertently introduce disadvantage in some households, it is important to review and update policies that assist people with the key issues of access and affordability.

National and state/territory concession regime

It is vital to consider how the current concession regime operates and how it will evolve to assist low-income or vulnerable consumers access the market. As the market adopts technology that allows consumers to better manage energy costs and reduce emissions, it is important that vulnerable consumers do not get left behind. Energy concessions play a crucial role in supporting low-income households and all sectors – business, government and community groups – can collaboratively raise awareness and improve accessibility.

Currently energy concessions and rebates are different in each jurisdiction. Despite the retail energy market being a national one, the approach taken to concessions varies significantly, which limits the effectiveness of the available support. PIAC considers there are lessons to be shared across jurisdictions which can enhance the support available for consumers around Australia.

For example, the Australian Energy Market Commission's (AEMC) Power of Choice review highlights that the current flat concession rates do not match a household's energy use, particularly as household sizes vary.[6] Larger families with lower income, or those living in regional areas with higher network costs, are not assessed based on their living circumstances.

Throughout 2015 and 2016, energy retailers worked closely with community organisations to improve support for vulnerable consumers. A Working Group chaired by AGL and consisting of industry and community organisations reviewed the energy concessions framework around Australia. PIAC supports the work of this group and a shared-responsibility approach to assisting vulnerable customers across all sectors.

PIAC recommends a shift towards a percentage-based primary concession, along with enhancements to emergency relief payments to simplify application processes and provide greater clarity for customers. Greater promotion of available support by all sectors is also needed.

Barriers to new products and services

There are consumers who are unable to fully participate in the market for new products and services. PIAC is concerned about that the split incentive often prevents private and social housing tenants from reducing their energy consumption. Landlords generally do not make energy efficiency investments due because the tenant is responsible for paying for the property's

6 AEMC, *Power of choice review*, 2012, 165.

energy bills. There is little incentive for tenants to make investments in properties they do not own, especially when security of tenure is not guaranteed.[7]

The NSW Government recently requested stakeholder feedback on its Climate Change Strategic Plan, including a Draft Plan to Save NSW Energy and Money.[8] PIAC advocated for a combined approach to assist tenants in accessing advanced technology benefits, including a review of tenancy laws to support minimum performance standards, technology standards and incentive programs.[9]

Consumer engagement

Effective consumer engagement is vital in a transitioning energy market. In particular, consumers who are experiencing hardship will benefit from active retailer engagement where both parties develop solutions to address and minimise consumer debt.

PIAC considers that a key strategy should be to encourage energy retailers to strengthen consumer engagement practices when dealing with vulnerable and hardship customers.

PIAC notes that 79,097 electricity customers in NSW were on a payment plan in September 2016, as well as 20,837 gas customers.[10] This is a substantial number of consumers seeking assistance with bill payments. PIAC is pleased the Australian Energy Regulator (AER) developed a Sustainable Payment Plans Framework that aims to guide retailer engagement with consumers when setting up a payment plan.[11] In the framework, consumers are provided with information about financial counsellors, energy and water ombudsman, energy efficiency practices, hardship programs and other support services. This will assist consumers to make informed choices to reduce debt owing. PIAC notes, however, that the AER's framework is voluntary for retailers, placing some consumers at risk of receiving minimal support during times of hardship.

PIAC recommends prioritising support for vulnerable and hardship residential consumers throughout the transitioning of the energy market. This involves reviewing the national and state/territory concession regimes, and identifying barriers to new products and services for vulnerable consumers, and strengthening consumer engagement practices.

2.4 How can price structures be made more equitable when consumers are making different demands on the grid according to their electricity use and their investments behind the meter?

PIAC considers that well designed tariffs and appropriate support mechanisms will ensure that consumers are paying equitable prices for their demand on the grid, regardless of what

7 PIAC, *Re-leased: Improving standards for tenants*, 2016. Available at: https://www.piac.asn.au/2016/02/04/re-leased-improving-standards-for-tenants/

8 NSW Government, A *draft plan to save NSW energy and money*, A plan to meet the NSW Government's energy savings target and save money for NSW households and businesses, November 2016.

9 PIAC see above no **Error! Bookmark not defined.**, 17-18

10 AER, 2016-17 Q1 Customers on a payment plan – by jurisdiction, available at: https://www.aer.gov.au/retail markets/retail-statistics/2016-17-q1-customers-on-a-payment-plan-by-jurisdiction, accessed on 8 February 2017.

11 AER, *Sustainable Payment Plans Framework*, 2016. Available at: https://www.aer.gov.au/system/files/AER%20Sustainable%20payment%20plans%20framework%20-%20Version%201%20-%20July%202016.pdf

technology or investments they may have behind the meter. PIAC will address this issue in section 6.3.

Integration of variable renewable energy

4.3 Is there a need to introduce new planning and technical frameworks to complement current market operations?

PIAC has previously commented on these issues in response to an AEMC rule change[12] and the review of the Regulatory Investment Test for distribution (RIT-D) consultation paper.[13] PIAC's view is that while it may not be necessary to introduce new frameworks, it is clear that the current planning documents and requirements are not sufficient to capture non-network solutions and distributed generation capacity. This is particularly evident in the incentives for demand management and planning for non-network solutions. Technology changes are driving greater options for the replacement and augmentation of the network as well as changing generation capacity. Traditionally assets were replaced with a like-for-like rather than non-network or alternative solutions. There are now far more options when it comes to replacing ageing or damaged assets.

PIAC supports reviewing planning and technical frameworks on the basis that it will encourage transparency and efficiency and ensure greater coordination between distributed generation, demand management and non-network solutions with current generation capacity. This is particularly important as batteries become more widespread in the NEM both behind the meter and at grid scale.

The current materiality threshold is $5 million (distribution) and $6 million (transmission). This is designed to minimise regulatory burden by only requiring a RIT when the project is of significant value. This may be appropriate for the augmentation of the network which often requires large financial investments for activities such as building a substation. It is less appropriate for replacing assets, particularly if a non-network solution is used. To date no battery project has cost over $5 million. If the current materiality threshold is retained, the most common replacement options will never require a RIT. PIAC has advocated for a lower materiality threshold for these systems. Failing to include these systems from the planning stage risks system stability and security and could have impacts on customer protections.

The current network connection framework is not adequate to encourage competition. Outside of NSW, jurisdictional frameworks prohibit competition. Even in NSW the framework limits innovation and the connection of stand-alone systems. PIAC understands that the developers of the Huntlee project in NSW decided not to connect to the grid because current procedures would require that once the system was operational they would have to hand over the infrastructure to the distribution network. Going off-grid may be a sensible solution, but in cases where connection to the grid does not occur because of current regulations there may be missed opportunities. There is also greater risk to customers from being off-grid rather than having a grid connection as a backup.

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12 PIAC, *Clarity, competition and connections, Response to transmission connection and planning arrangements*, 30 June 2016.

13 PIAC, *Addressing key gaps in the regulatory investment test, Submission in response to National Electricity Amendment (Replacement expenditure planning arrangements),* 24 November 2016.

The financial benefits from competition in this space are significant, as the recent Energy Network Association (ENA) commissioned research from Energia demonstrates. They suggest that savings generated by the 'orchestrated' management of the network with both stand-alone systems and individual households with distributed energy technology could result in savings of 16.2 billion across the NEM, or reduction of customers' bills by 30% by 2050.[14] There are estimates that several hundred million dollars have been lost in the last 5 years, just from restricted competition in connecting to the distribution network.

PIAC is of the view that the current connection and planning frameworks should be reviewed in the context of new technology options. If found necessary, a rule change to address the issue of limited competition should be initiated. PIAC also encourages the review to consider Ofgem's approach to managing competition in connection and ensuring flexibility. The UK is more advanced in its efforts to promote competition and alternative energy systems for the benefit of consumers.

4.4 What role can new technologies located on consumers' premises have in improving energy security and reliability outcomes?

4.4.1 How can the regulatory framework best enable and incentivise the efficient orchestration of distributed energy resources?

Given the investment made by households in solar PV and the continuing growth in batteries, it would be wasteful not to find ways to utilise them in the wider system. There are a number of innovative studies looking at how to use household batteries and PV to reduce peak demand and avoid the use of grid capacity. TasNetworks and a consortium of academics are doing one such study[15]. While in its early stages, research such as this will be vital in designing the network of the future. The challenge is ensuring that the investment in research as well as adequate consumer protections keep up with the pace of changes in the market.

The efficient orchestration of DER is the focus of the AER's current consultation on the design of the Demand Management Innovation Scheme (DMIS) and Innovation Allowance (DMIA), the AEMC's approach paper for the review of the electricity network economic regulatory framework and the AEMC's distribution market model approach paper. There are other reviews on the horizon, including a review of embedded networks. The Essential Services Commission (ESC) and the Victorian Government have also recently reviewed the policy and regulation of embedded networks or exempt operators in Victoria.

This overarching review of the whole system comes at a critical time and must ensure that these individual reviews are coordinated and result in concrete improvements to the system, rather than in further, disjointed band-aid solutions that add further complexity to the system.

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14 Energeia, *Unlocking Value for Customers: Enabling New Services, Better Incentives, Fairer Rewards*. Report for ENA and CSIRO, Electricity Network Transformation Roadmap, October 2016, 3.

15 TasNetworks, Consort Bruny Island Battery Trial https://www.tasnetworks.com.au/customer-engagement/engagement-activities-and-outcomes/consort-bruny-island-battery-trial/, accessed 13 February 2017.

PIAC supports moves to encourage the greater utilisation of non-network solutions and demand management, but we are cautious that networks may be given further opportunity to use the system to their advantage when it is not in the long-term interest of consumers. A thorough review of the current incentive schemes is needed to ensure that they are complementary and are working to achieve lowest possible costs for consumers.

Prices Have Risen Substantially

6.1 What additional mechanisms, if any, could be implemented to improve the supply of natural gas for electricity generation?

The events leading to load shedding in South Australia on 9 and 10 February 2017 should be reviewed to ensure that AEMO's operating procedures and the wholesale market is flexible enough to enable additional gas generation capacity to come online to prevent supply constraints.

Recent reviews of the gas market have found issues with ensuring transparent and fair capacity pricing in transmission pipelines. This is the subject of the current Vertigan review[16] and Gas Market Working Group as well as AEMC and ACCC reviews, and the outcomes will be critical for gas prices. PIAC has participated in these reviews and repeatedly called for greater coordination between electricity and gas economic regulatory frameworks. [17] This will be even more important as gas becomes a greater component in the electricity wholesale market.

However, reform that excludes wholesale system reform will not address price issues for gas customers and gas generation. This has become evident through both the load shedding event and the black start event in South Australia. The failure to bring on additional gas generation during the heatwave in SA resulted in load shedding that affected around 40,000 customers. It appears that the Pelican Point plant was not operating to capacity due to planned maintenance during the peak period in the year when it may be used. While the full details of the black start event in September are still unfolding, recent reports of information obtained through FOI reveal that gas fired generators failed during the storm, and those normally relied on to restart the system during a black start event were not operational.[18] This is troubling for a number of reasons, but in particular because generation facilities that are used to restart the system receive payments to provide restart services. The gas market is opaque and there are troubling signs about the reliability of gas and the impact gas has on wholesale electricity prices.

LNG exports out of Queensland have resulted in higher domestic gas prices and made it harder to obtain gas contracts. Increasing gas prices have put pressure on the manufacturing sector and on households. There is conflicting information from a variety of sources about the best solutions to gas prices increases. PIAC believes that this review is best placed to address the confusion and the lack of clear information about the operation of the gas sector, and to comprehensively

16 Dr Michael Vertigan (AC) *Examination of the current test for the regulation of gas pipelines* Consultation paper, 4 October 2016.

17 AEMC, East Coast Gas Review

18 Guardian AU, Malcolm Turnbull was told gas plant shut down before South Australia blackout, https://www.theguardian.com/australia-news/2017/feb/13/malcolm-turnbull-was-told-gas-plant-shut-down-before-south-australia-blackout?utm_source=dlvr.it&utm_medium=twitter accessed 13 February 2017.

and objectively examine options such as the potential role of a domestic gas reservation in gas pricing.

6.2 What are the alternatives to building network infrastructure to service peak demand?

Demand management must be considered a key part of ensuring a secure, clean and affordable energy system. To date there has not been enough attention given to the potential role of demand management in the future market and in ensuring the system copes with changes.

Related to pricing reform is the current review of the Demand Management Incentive Scheme (DMIS) and Demand Management Innovation Allowance (DMIA). Demand management is another tool to encourage more efficient use of the network and to reduce or shift peak load to reduce pressure on the system. Demand management can include multiple responses such as demand response, energy efficiency and embedded or distributed generation.

To date, the economic regulatory framework has failed to provide the right incentives for networks to adopt demand management.[19] This issue has not directly been identified as a priority in the AEMC's current reviews, but it will be important to monitor new DMIS and DMIA as they are implemented to determine if they achieving their intended goals.

The current system also lacks incentives for innovation and research and development. For example, the research and development to test the feasibility of LED for public lighting is being funded by the Sydney City Council, and not Ausgrid who is the public lighting provider. Research for Ausgrid's *Smart Grid, Smart Cities* research program was funded by the Australian Government.

The failure of the framework to incentivise networks to make such investment and any lessons learned from attempts to correct this will be useful to review, or at least to capture in the system wide considerations.

The Institute for Sustainable Futures at University of Technology Sydney has done extensive research into the reasons why demand management is critical and has conducted cost benefit analysis to guide the design of the DMIS.[20] There are key questions about the design that will be resolved in the coming months as the AER consults with stakeholders. PIAC believes key principles that should underlie the incentive scheme and allowances. These include developing transparency and public reporting requirements to ensure accountability for the amount of demand reduced. This in turn will facilitate more accurate cost-benefit analysis and review of the scheme to ensure it is generating benefits. The scheme should set targets for the networks to reach to encourage demand management that is tied to any incentive payments. Accountability and measurability need to be built into the schemes.

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19 TEC, *Demand management incentive scheme rule change request: Submission to Australian Energy Market Commission*, November 2013, 3.

20 ISF. *Restoring Power: Cutting bills & carbon emissions with Demand Management, A report for the Total Environment Centre*. 2013.

6.3 What are the benefits of cost reflective prices, and could the benefits be achieved by other means?

The AER is in the process of assessing the revised network tariff structure statements for the three NSW networks. Once this is done, PIAC recommends a NEM wide review of the TSS against the intent of the reformed pricing principles to ensure that in the next round of TSS equitable and effective tariffs are implemented.

New pricing principles were introduced in 2014 to require networks to set cost reflective prices. The main aim of the pricing reform was to send signals to consumers about the costs of using the network at peak periods, encouraging them to use less energy at those times and thus reduce the need to expand the network, a key driver of recent price increases.

From the process so far, it appears that the rule-change and the pricing principles lack sufficient clarity to guide the networks tariff development. The AEMC drafted the new rule so that networks could develop tariffs that reflect their customer base and the availability of advanced meters and network capacity. PIAC agrees that some flexibility is necessary, but we consider that guidelines are needed to provide parameters within which the networks should operate and provide greater guidance for consumer representatives assessing the proposed tariff structures.

The introduction of the new pricing principals has been phased in with the first round of tariff structure statements to be in place for two years. This will allow the networks time to introduce tariffs that are progressively cost reflective. To date, all distribution networks across the state have submitted TSS to the AER for approval.

This provides time for the AEMC and AER to review the process and outcome of the TSS against the intent of the pricing reform to ensure that the next round of TSS, which lasts for five years, is effective and does not lock in poorly designed tariffs that send the wrong investment signals.

Based on its experience in the NSW networks tariff process, PIAC has a number of concerns.

Of particular concern is the lack of clarity between marginal capacity and infra-marginal capacity in the network. Congestion pricing makes sense when there is congestion, however when it is applied to infra-marginal use, the costs outweigh the benefits. This results in consumers being charged marginal prices when they system is not constrained, causing them to pay more than is fair and sending incorrect price signals.[21] Additionally, PIAC has concerns that the balance between residual and long-run marginal cost (LRMC) is distortionary and could lead to consumers and business making paying more than necessary for their energy on the basis of decisions that do not benefit the grid. If these issues are not addressed the potential costs will outweigh any benefit of greater cost reflective tariffs.

PIAC is of the view that the customer impact of cost reflective pricing has not effectively been considered. This is particularly important for vulnerable and low income consumers. Many low-

[21] Sapere Research Group, *Sapere Review of AER draft decision; tariff structure statement proposals, Ausgrid, Endeavour Energy, Essential Energy*, August 2016, v-vi.

income consumers are high energy users[22] and may receive high bills if they are unable to shift demand away from peak periods. It is imperative for the networks to address this issue and to find ways to soften the impact of this transition on those customers worse off under a cost reflective tariff. PIAC is disappointed that the networks have failed to use this two-year transition period to implement trials and studies to understand the impact on customers and to develop policies and tariffs that may help these customers.

PIAC remains involved in the wider conversation about the role of cost reflective pricing and the journey towards more innovative tariffs. Consumers are making investment choices about solar and batteries based on today's electricity pricing and tariffs, resulting in sunk costs, locking them into a household energy supply for a number of years. Choices consumers make today will have an impact on the NEM well into the future. While PIAC acknowledges that price is not always the deciding factor for households adopting solar and batteries - many doing so for environmental and social reasons - price is a driving factor for many.[23] Consumers are impacted now while networks slowly develop dynamic cost reflective tariffs and provide information to the market.

PIAC is also concerned that too much emphasis has been placed on network tariff reform without corresponding attention to how those tariffs are translated into retail prices and how they are communicated to consumers. If consumers do not understand and adopt cost reflective prices, then the intended benefit of the pricing reforms will not eventuate. PIAC recommends that this review consider both retail tariff design and any state level policy, such as Victoria's opt-in policy towards cost-reflective pricing,[24] as part of this review.

Finally, consumers are keen to begin the conversation with networks about tariff design and the link between consumption and peak capacity in the system. Research has shown that the more complex a tariff is the harder it is for customers to understand and the lower the level of acceptance of that tariff will be.[25] More broadly, research also demonstrates that the more unpopular or risky a decision is perceived to be, the more effective information and communication must be provided to improve acceptability.[26]

PIAC has recommended that the networks use the next two years to begin informing and communicating with customers about cost reflective tariffs. For example, networks might begin by sending messages via a number of communication channels to customers before expected heat waves requesting customers not to use too much electricity during the peak hours of the day.

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22 AGL, *Effective support for vulnerable households – closing the gap between capacity to pay and cost of consumption Part 2*, http://aglblog.com.au/2015/09/effective-support-for-vulnerable-households-closing-the-gap-between-capacity-to-pay-and-cost-of-consumption-part-2/ September 2015. Viewed 23 January 2017.

23 KPMG, *Residential PV, Customer experiences and future developments*. A report for Energy Consumers Australia, December 2016 37.

24 DELWP, *Managing Electricity Demand* http://www.delwp.vic.gov.au/energy/electricity/managing-electricity-demand, Viewed 27 January 2017.

25 Karen Stenner et al, see above no **Error! Bookmark not defined.**, at 8.

26 Sara Dolnicar, Anna Hurlimann, Long Duc Nghiem,' 'The effect of information on public acceptance – The case of water from alternative sources', Journal of Environmental Management Volume 91, Issue 6, June 2010, at 16.

This could be a useful tool for the networks to begin developing customer knowledge about tariffs and energy distribution in general.

6.4 How can we ensure that competitive retail markets are working?

6.4.1 What outcomes of competition should we monitor?

An assessment of competition cannot be based on observing one indicator at one point in time. Multiple indicators are required to form a more complete picture of the state of competition. Information on a range of indicators needs to be considered collectively before judgement can be formed on the overall state of competition. For example, a high degree of choice for consumers needs to be accompanied by appropriate, accessible and reliable information if the choice is to be effectively operationalised.

PIAC considers that effective competition occurs when consumers are paying lower prices. In competitive market theory, businesses compete with each other to deliver quality services, resulting in lower costs and an increase in innovative products and services. PIAC considers competition ineffective if not all consumer groups can access its benefits.[27]

PIAC recommends the review monitor the impact of competition on residential consumers, particularly vulnerable or disadvantaged consumers. CHOICE's report, *Consumer Pulse: Australians' attitudes to cost of living 2015- 2016*, states that 81% of low-income Australian households felt electricity bills are the main cause of financial stress.[28] Furthermore, Energy Consumers Australia (ECA) recently conducted a survey on residential consumers' experience with solar installation. The research found that 92% of consumers said the main reason for installing solar was to lower energy bills.[29] PIAC is concerned about consumers already facing financial hardship who have little or no opportunity to afford the upfront costs of advanced technology that aims to reduce energy bills. This, in itself, is an example of where competition fails.

PIAC recommends the monitoring of competition include the impact on vulnerable or disadvantaged consumers, using indicators of customer satisfaction and attitude, engagement with retailers, access to information on products and services and price impact on low-income consumers.[30]

Importantly, recent evidence demonstrates that the retail component of an energy bill is significantly higher in deregulated retail markets compared to regulated markets. This could indicate either that operating in a competitive market is very expensive or the competitive market is ineffective.

There are two main issues that PIAC wishes to raise in this context. The first is that the deregulated market places an expectation on consumers to remain engaged in the market in

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27 PIAC, *A competitive market to benefit all - submission to IPART's review of the performance and competitiveness of the retail electricity market in NSW*, 2016, 2.

28 CHOICE, *Consumer Pulse Repor*t, July 2016, 8.

29 ECA, *Consumer participation in solar and battery storage markets*, 2017, available at: http://www.energyconsumersaustralia.com.au/research/consumer-participation-in-solar-and-battery-storage-markets, accessed on 8 February 2017.

30 Ibid 9, 2-4.

order to ensure that they pay the lowest price or find the product that best meets their needs. Accordingly, PIAC believes there is a risk that consumers who 'set and forget' their electricity supply arrangements, or are not able to effectively navigate the complexities of the competitive market, will pay more than they need to for essential energy services.

The second is that, as the competitive retail market develops, retailers will continue to put greater effort into gaining and retaining customers. The cost of this effort, in terms of larger marketing departments, more market research and staff to design new products, will ultimately be passed on to consumers through retail prices. While retailer effort to attract new customers may appear to be a sign of a competitive market, the increased costs passed through will deliver poorer outcomes for consumers. If this is occurring, PIAC is of the view that the market is failing to deliver an efficient outcome for consumers and that effective competition cannot be said to exist.

PIAC considers it vital that the operation and outcomes of the competitive market are effectively monitored, to ensure they are occurring truly in the long-term interests of consumers. As PIAC submitted to previous reviews of competition, it is crucial that on-going monitoring seeks to understand how the competitive retail electricity market develops. Such monitoring serves both as a tool for consumer advocates such as PIAC and as a potential basis for government intervention in the market.

In particular, by tracking price movements, and the movements in other cost components such as green schemes, energy market institutions should be able to determine whether increases in retail costs are working to cancel out lower costs in other areas of the energy price cost stack.

Energy Market Governance is Critical

7.1 Is there a need for greater whole-of-system advice and planning in Australia's energy markets?

PIAC commissioned research into energy market governance to inform its response to COAG's Review of Governance Arrangements for Australian Energy Markets.[31] Many of the concerns we raised in that submission remain unaddressed. We reiterate these here.

Firstly, there are significant and well-documented failures in accountability to consumers of the COAG Energy Council and the energy market institutions. Appleby's report details these against the criteria of participation, transparency, review/appeal mechanisms, independent oversight, and democratic oversight. Crossley's report highlights particular issues with the operation of the Energy Council, including in comparison with other COAG Councils.

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[31] PIAC, *From complex fragments to competitive consumer-focused market: Submission in response to Review of Governance Arrangements for Australian Energy Markets: Issues Paper*, May 2015, available https://www.piac.asn.au/wp-content/uploads/150508_governance_review_piac_submission_final.pdf. PIAC commissioned the following research reports, which are contained within its governance submission:
Dr Gabrielle Appleby, University of New South Wales, *Accountability in the National Energy Market*
Penelope Crossley, University of Sydney, *Review of Institutional Governance arrangements of the National Electricity Market*
Bruce Mountain, Carbon + Energy Markets, *Bifurcation in the economic regulation of network service providers in the National Electricity Market*
Bruce Mountain, Carbon + Energy Markets, *The inclusion of environmental protection in the National Electricity Objective*.

PIAC agreed with the central finding of the Governance Review report that outcomes for consumers and the NEM as a whole have suffered from a lack of strategic policy leadership. We supported Energy Council efforts to address this, and accordingly, we welcomed the proposal for the Standing Committee of Officials (SCO) to take greater leadership in strategic policy development. However, the Governance Review also recommended that SCO be assisted in this work by the Australian Energy Market Commission (AEMC). While we agree that SCO should receive assistance, consumers still have serious concerns about the AEMC's ability to integrate consumer perspectives into its work.

To do so requires a detailed understanding of differences in consumer markets based upon jurisdictional circumstances, such as where markets are more complex and evolved compared with markets with minimal competition and no technological diversity. Given the AEMC's separation from such market information, this must be re-considered. The experience of consumer groups that have initiated AEMC rule changes is that there can be a lack of clarity about the level of evidence required to substantiate a rule change.

PIAC submits there needs to be a clear obligation to incorporate consumer views into AEMC decision making processes, having identified the existing information/evidence bias that exists within the organisation. We believe that the most effective way to better integrate consumer perspectives into the work of regulators is through the appointment of a consumer commissioner to promote the diversity of the markets they regulate (including, consumers) and ensure appropriate accountability mechanisms, in particular to the objective of 'long term interests of consumers'.[32]

PIAC recommends changes to give consumers influence where significant policy decisions are made, including:

- establishing a Consumer Advisory Committee for COAG EC;
- requiring consumer representatives to sign off on rule changes (and if they cannot agree, for this function to revert to the COAG EC);
- requiring energy market institutions to have Commissioners and Directors who have knowledge of, or experience in, consumer protection and demand side participation, and
- considering approaches that enhance formal representation of consumers in network determinations such as negotiated settlements (this was also recommended by the Productivity Commission in the Governance Review).

Further, there is a major failure of national consistency in retail regulation, which barely exists given National Energy Consumer Framework (NECF) derogations and Victoria having separate retail laws. There is also the issue in regard to the concentration of gentraders in the market (i.e. reduced competition), and the specific case of competition in Victoria (and increasingly so in NSW) having increased the retail component of prices.

[32] Such a position would mirror that of the Australian Competition and Consumer Commission (ACCC) section 7(4) of the *Competition and Consumer Act 2010 (Cth)* provides that at least one member of the Commission must be a person who has knowledge in or experience with consumer protection.

Given the scale and speed of the transformation currently underway, there is a need for a fresh streamlined approach, especially to setting market rules. There is a danger that otherwise Australia will miss out on productivity gains that would result from more rapid adoption of new technologies and services.

7.1.1 If so, what are the most appropriate governance arrangement to support whole-of-system advice and planning?
7.1.2 Do the roles of ministers and energy market institutions need further clarification?
7.2 What lessons can be drawn from governance and regulation of other markets that would help inform the review?
7.3 How should the governance of the NEM be structured to ensure transparency, accountability and effective management across the electricity supply chain?

It is vital to identify which processes are most effectively the responsibility of state governments and which are most appropriately national responsibilities. This examination should be in the context of the transforming energy market – especially the importance of energy efficiency and demand management, distributed generation and storage – to improve outcomes for consumers.

The COAG Energy Council should reclaim its role in setting the future direction of national energy policy, possibly through issuing a statement of policy principles on key issues to direct the work of the energy market institutions.

Given its importance in setting the future direction of national energy policy, any future changes to the scope and annual work plan of the COAG Energy Council should be subject to consultation with consumers and industry. There is also a need to enhance consumer representation across the COAG Energy Council and energy market institutions. Consumers have access to consultation mechanisms, but (other than in the case of Energy Consumers Australia), no representation in decision-making in the NEM.

After reviewing all available options and consistent with international practice, in order to create substantial efficiencies and ensure more streamlined, effective and accountable regulation, PIAC recommends rule-making in the NEM be brought in under Commonwealth legislation and combined with rule administration. In practice, this would mean transferring the AEMC's rule-making functions to a Commonwealth Energy Regulator (currently the AER); and the AEMC's review and energy market reform roles to the COAG Energy Council, consistent with its role as the lead policy maker in the NEM.

In order to facilitate more effective regulation in a transforming energy market, two Commissioners of the Commonwealth Energy Regulator should be required to have knowledge of, or experience in, consumer protection and demand side participation. Consistent with the other energy market institutions AEMO and ECA, the new Commonwealth-based Energy Regulator should be funded by market participants through a levy administered by government.

Best practice would see the AEMO Board include at least two consumer representatives (one representing residential consumers and one representing small business) and that the government and industry representation decrease proportionally. These AEMO Board members should be selected in consultation with ECA.

7.4 Are there sufficient outcome statistics for regulators and policy makers to assess the performance of the system?

7.5 What governance measures are required to support the integration of energy and emissions reduction policies?

7.5.1 Should the AEMA be amended?

7.5.2 Should the NEO be amended?

PIAC considers that the Australian Energy Markets Agreement should be amended to allow for majority voting on all matters, consistent with other COAG Ministerial Councils. PIAC also considers that the overriding instruction in the NEM, the National Electricity Objective (NEO) (and its counterparts in the retail and gas markets) are narrow and out of date.

AEMC office holders have affirmed the AEMC's focus on economic efficiency when interpreting the NEO. For example, Australian Energy Market Commission Chairman John Pierce has said, 'The NEO refers to issues of economic efficiency; environmental and social issues are dealt with through other pieces of legislation'.[33] However, the objective of energy regulation has not always been so narrow. For example, the mission of National Electricity Code Administrator (NECA) established by the state governments in 1997 to enforce the National Electricity Code was to promote the effectiveness, efficiency and equity of the national electricity market; and lead the development of the market towards more competitive, market-oriented outcomes in order to deliver a viable market that benefits end-use customers.[34] Similarly, the Australian Energy Market Agreement made in 2004 included the objective to address greenhouse emissions from the energy sector, in light of the concerns about climate change and the need for a stable long-term framework for investment in energy supplies.

Many state government energy regulators still have broader objectives. For example, in NSW IPART must consider 'the need to maintain ecologically sustainable development' and the WA regulator must 'avoid discrimination in that market against particular energy options and technologies, including sustainable energy options and technologies such as those that make use of renewable resources or that reduce overall greenhouse gas emissions' and it has an objective 'to encourage the taking of measures to manage the amount of electricity used and when it is used'. Queensland currently stands alone in having an objective that largely mirrors the NEO, while Victoria's and Tasmania's are broadly consistent with it.

PIAC commissioned Bruce Mountain of Carbon + Energy Markets to analyse the economics of including carbon emissions in the NEO. Mountain's report demonstrates that economic objectives should include emissions reduction, as in all comparable international jurisdictions.

PIAC is of the view that climate change and energy policy are inseparable economic objectives. Even if the NEO is a purely economic objective then it should necessarily include climate change as climate change is a fundamental economic issue. It is inefficient and inappropriate for climate

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33 John Pierce, 'The Australian National Electricity Market: choosing a new future', (World Energy Forum speech, 12-16 May 2012 Quebec City, Canada).

34 For example, see http://www.neca.com.au/AboutNECA/index.html

change, renewable energy and energy efficiency policy to be separate. It creates regulatory conflict and complexity.

Mountain's report for PIAC gives a detailed argument using the concepts of Transaction Cost Economics to conclude 'emission reduction is very deeply integrated with the design and operation of energy markets and systems of network regulation'.

PIAC's overall view is that the guiding instructions of the NEM should reflect consumers' interests recognised broadly, including social and environmental objectives.

Crossley's research makes it clear that it would be consistent with international practice to include social and environmental objectives like affordability and focus on total cost of energy services, not merely 'price' (treated as price per unit of energy) which is just one element of consumer benefit.

The NEO should be reviewed and updated to meet the needs of existing and future consumers in a transforming electricity market. This review focus on a broader interpretation of the 'long term consumer benefit', including appropriate weighting to emissions reduction and social objectives.

7.6 How can decision-making be appropriately expedited to keep up with the pace of change?

It has been PIAC's experience that important rule changes, which seek to ensure regulation keeps up with rapid developments in the energy market, have not commenced for up to a year following the submission of a proposal. We believe that this has left all market participants, including consumers, at a disadvantage. It has also meant that by the time of a final decision, other market failures are presenting themselves, holding back important innovation and productivity improvements in the NEM. For example, the issue of fixed term prices being addressed, despite the outcome of the rule change.[35]

PIAC remains concerned that the AEMC's rule change processes are slow and inefficient. PIAC's research found that the system suffers both from a bureaucratic inefficiency and an industry bias, at the expense of the consumer's interests.[36]

The lack of timely responsiveness contributes to uncertainty and excess investment and network prices that are significantly higher than they could have been. For example, the problem of inefficient network pricing was raised in 2006, but the relevant rule changes were only made in 2014, and with a lengthy transition period. This demonstrates that the system as it currently exists is not flexible or adaptable.

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35 Section 10, Energy Legislation Amendment (Consumer Protection) Bill 2015, Victoria

36 PIAC, 'From complex fragments to competitive consumer-focused market: Submission in response to Review of Governance Arrangements for Australian Energy Markets: Issues Paper', May 2015, available https://www.piac.asn.au/wp-content/uploads/150508_governance_review_piac_submission_final.pdf; Penelope Crossley, 'Review of the institutional governance arrangements of the national electricity market', May 2015, available https://www.piac.asn.au/wp-content/uploads/150508_governance_review_piac_submission_final.pdf

The timeliness of the AEMC's processes was raised in COAG's Review of Governance Arrangements for Australian Energy Markets and has not yet been fully addressed. This is an issue needs to be explicitly addressed in any consideration of reform of governance frameworks.

We support an expedited rule change process. This could include increased resources for the AEMC, greater consultation in the prioritising of issues or amendments to the statutory rule change process. Any process change, however, must enhance consumer participation, and not create barriers to it.