Government of South Australia Department for Energy and Mining Consultations on smarter homes

Energy Consumer Australia Submission

July 2020

ENERGY CONSUMERS AUSTRALIA

Contents

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Introduction

Consumers have told us that a better energy future is affordable, simple, easy to manage, clean and inclusive. Consumers want to have a say but do not have the information or platform to do so. This highlights the need for consumers to be partners in designing the future energy system.

Energy Consumers Australia welcomes the opportunity to respond to the Government of South Australia's Department for Energy and Mining ("the Department") consultation papers on smarter homes. The consultation papers seek a view on proposed changes to the South Australian energy framework to address imminent security concerns with the electricity system. The proposed changes include additional technical standards for new rooftop solar and smart meters, together with prescribed tariffs for customers on standing offers.

Energy Consumers Australia is the national voice for residential and small business energy consumers. Established by the former Council of Australian Governments Energy Council in January 2015, our objective is to promote the long-term interests of energy consumers with respect to price, quality, reliability, safety and security of supply. We have also been tasked with understanding differences in energy markets and the implications across jurisdictions, and building the knowledge and capacity of advocates through evidence and research.

Energy Consumers Australia is well positioned to provide a customer-centred perspective on changes to energy frameworks such as those being considered in South Australia. Through our Energy Consumer Sentiment Survey (ECSS), Energy Consumers Australia surveys approximately 2,300 residential and small business consumers twice a year about their satisfaction, value for money and confidence in relation to their electricity and gas services. The voices of South Australian energy customers are captured in the survey results. The survey provides a strong evidence base for understanding the experiences, preferences and aspirations of customers. This includes issues such as trust, affordability, and customer attitudes to new technology such as solar and storage.

We also actively engaged in the recent Australian Energy Regulator (AER) regulatory determination for SA Power Networks (SAPN). We gained a deep insight of the changing South Australian energy system, and the opportunities and challenges in responding to customers' preferences to install household solar systems. Based on the extensive engagement and

communication program of SAPN, we supported innovative tariffs and future proofing strategies such as dynamic export limits.

Our framework

In analysing the Department's consultation papers, we have been guided by the National Electricity Objective which centres on the long-term interests of consumers. In recent years, we have been thinking deeply about the key design elements of the future electricity sector that best meets the long-term interests of consumers. Our thinking has been guided by our research into consumers' views on the energy sector.

In the June 2020 Energy Consumer Sentiment Survey, consumers are telling us that while satisfaction with the overall value for money of electricity has increased from last year (up 13 per cent to 59 per cent), it still lags behind all comparable services including insurance and banking. Satisfaction with reliability also increased seven per cent to 72 per cent. While the overall confidence that the market is working in consumers' interests has increased, it is still low at 36 per cent.

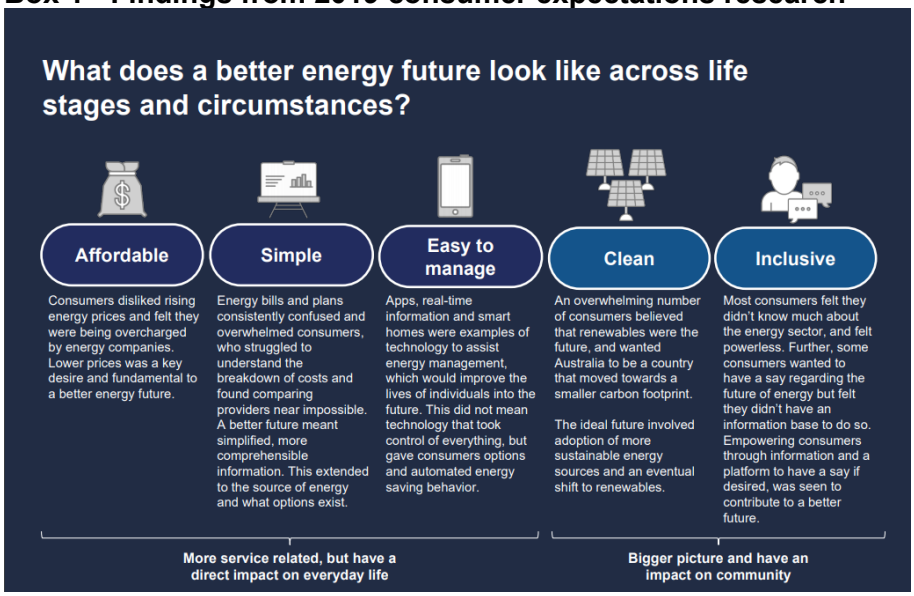
Consumers are confident in their ability to resolve issues and make choices however, most consumers do not believe that there are tools available to help them make decisions. Consumers also do not have confidence and trust that the sector is working in their long-term interests. What this means is that rebuilding trust that the sector is working in the long-term interests of consumers is not just important in its own right, but central to successfully managing the energy transition.

Consumers are also indicating to us that a missing part of the trust puzzle is a long-term objective and an explicit, shared view about how we are going to manage the transition together. There is evidence coming through our research that consumers want clarity about how and what they do – how they manage their energy bills, manage their use and technology to maintain the comfort of their homes and improve the competitiveness of their businesses – fits into a bigger, longer-term picture.

Consumers have said that they are willing to change their behaviour, with strong support for financial rewards for reducing energy usage among South Australian consumers. What this tells us is that, with the appropriate incentives, consumers can help solve the problem in South Australia.

Recently, Energy Consumers Australia commissioned Australia-wide consumer expectations research that explored the lives and needs of consumers, households and small businesses in relation to energy. Specifically we asked consumers how energy fits into their lives now, what the future of energy should look like and what Australians want from the sector. Box 1 shows that a key theme was inclusiveness – consumers wanted a say on the evolution of the energy market, but feel they lack the information and platform to be heard.

Box 1 - Findings from 2019 consumer expectations research



These research findings support our 'Affordable, Individualised, Optimised' or 'AIO' framework, which reflects on the new environment to offer a vision for the future of energy services.

The 'AIO' framework reflects consumer experience and priorities that are emerging from our surveys and research. In simple terms what the concept says is that in the new market affordability is a function of individualised services within an optimised system (A= I x O).

1. **Affordable** - Affordability must be a constraint on all our investments and decisions about energy. This should be an explicit criterion in our decision-making up and down the supply chain. Consumers want prices to return to more normal levels and to be confident they are getting value for money.

2. **Individualised** - Energy services must be built around individuals to reflect their unique circumstance; enabling people to manage their own use and costs. Households and small businesses are willing partners if provided the support they need to make further change – whether that be more information, new affordable technology or other support. Making it easy and convenient for households and businesses to share their resources, to see value for their flexibility and assets as part of the solution – is an important principle. Value is not just about pricing a commodity but has new dimensions as digitisation allows more people to trade-off their time and money, their skills or the skills of others, and select the level of risk that they want to take for the outcome they want.

3. **Optimised** - Existing and future investment in the power system – networks, generation and retail – must be optimised based on consumers demands that not one more dollar than necessary is spent than required, and new investments are not made one day earlier than necessary. The key to optimising our energy system is providing

genuine choice and control to households and small businesses, rewarding their flexibility and embracing them as partners for change.

It is against the AIO framework that we have sought to provide feedback to the Department. We have first sought to understand the potential detriment to energy consumers from the problem identified by the Department, and then sought to assess whether the proposed solution meets our AIO consumer-focused vision.

Analysing the problem

The Department has clearly articulated the key problems facing the South Australian energy system. In essence, growing penetration and reliance on household solar systems to energise the South Australian network is causing stress on an energy system that was designed for one-way flow of electricity from large generation sources.

The key risk identified by the Department is the potential for insufficient demand to securely run the power system. As stated by the Department, the challenge is most significant when South Australia is islanded from other states. If a severe fault coincides with high distributed solar generation output, the Australian Energy Market Operator (AEMO) may not have the ability to operate South Australia in a secure state. This is because the solar systems currently installed on the network do not allow for centralised control to ride through voltage disturbances or disconnect if demand is too low. Further, there are limited incentives for customers to shift load to the middle of the day to ‘soak up’ the solar output.

We also understand that a lack of centralised control leads to voltage and quality of supply issues for SAPN. As part of its 2020-25 regulatory proposal, SAPN extensively engaged with customer representatives on potential solutions to address the issue including a dynamic export framework.

We recognise that the South Australian electricity system faces a significant challenge in providing secure and reliable services. We are also persuaded that the security risks are imminent, and that action needs to be taken swiftly to mitigate the risk. For this reason, we support sensible solutions to address the risk of major energy disruption to South Australian customers.

Analysing the proposed solutions

The consultation papers outline proposed changes to the energy regulations in South Australian to mitigate the security risks identified above. The key changes include:

- Tightening the technical standards for household generation to ensure they are capable of remote disconnection and reconnection, can ride through voltage disturbances, and respond to dynamic export limits imposed by the distribution network.
- Adding to the minimum specifications for smart meters to allow separate operation and measurement of load and generation for a customer.
- Imposing a requirement on retailers to pass through the network tariff rates of SAPN to customers on the relevant standing offers.

Energy Consumers Australia supports changes to regulations when there is clear evidence that the proposed solution best meets the long-term interests of customers, and when energy consumers participate in, and support, the decision.

In reviewing the consultation papers, we saw that the proposed initiatives could be categorised as those aimed at addressing the “now” problem and those aimed at “future proofing” the system in the longer term.

Addressing the “now” problem

Ride through standards

We consider that measures to help ensure installations can ride through voltage disturbances are needed to help with the “now” problem over the shorter to medium term. Our view is that this could address the risk of minimum demand leading to security issues, such as blackouts, with little impact to consumers. We would encourage the Department to work closely with SAPN and solar providers to work out the optimal timeframe for the initiative to deliver on its potential.

Partnering with consumers through rewarding network tariffs

We support the proposed tariff changes. Integral to the success of the proposed change is further impact analysis to inform measures to help us understand who might be impacted and what they could change at home to make the most out of the new tariffs. This analysis is critical to identifying any impacted vulnerable consumers and designing assistance measures to support this cohort.

These measures could be cheap, simple and targeted. When combined with other measures the Department is proposing as well as innovative solutions available in the market, this will only work to further strengthen the system outlook in South Australia.

A good example of this would be to retrofit hot water systems in social housing with devices that automate the shifting of hot water load to more appropriate times. In this example, the automation removes the reliance on individuals to change their behaviour on a daily basis. Instead, consumers can "set and forget" and receive the benefits of the new tariffs all while supporting the broader community effort to strengthen the energy system. This initiative could be extended to include private rental properties, with the Department offering an incentive (such as a rebate) to private landlords to retrofit hot water systems in their properties.

This type of innovative partnership is being implemented in Hawaii, through a Shifted Energy initiative.[1] This initiative has added 2.5 megawatts of grid services, allowing Hawaiian Electric to better manage the system during peak solar and wind production periods – a similar challenge to that faced by South Australia.[2] Under the Shifted Energy model, it retrofits electric water heaters with controllers for free, and provides monthly billing credits depending on the level of that heaters' participation. Shifted Energy has entered into a Grid Services Purchase Agreement with Hawaiian Energy that allows it to use the controllable fleet as a battery or virtual power plant.

"Future proofing"

The rest of the initiatives proposed by the Department could be considered "future proofing" and focus on ways to control consumers appliances and generation assets. We agree that now is the time to begin thinking about, and taking action to, future proof the network by devising solutions capable of bringing harmony to the current system dissonance.

Key to successfully "future proofing" the South Australia's energy system is developing initiatives that unlock value for all parties; supported by tools, platforms, and information for consumers. These types of initiatives require time – time to engage with consumers; time to provide consumers with rewarding opportunities to partner with energy market; and time for the market to bring the product to market in a competitive way that also meets the policy goals.

We support opportunities where consumers have given their considered, informed consent to relinquish control of their assets for the purpose of responding to system security issues, rather than control being taken without their knowledge.

Our fundamental concern with 'fast-tracking' a solution is that it will likely be ineffective at resolving the imminent security risks to the energy system. Longer implementation timeframes would also provide the Department with more to time to consider alternative 'incentive based' options that may be more effective at resolving the problem in the short term.

In the sections below we suggest that the Department lengthen and broaden its consultation on solutions to address the identified problems.

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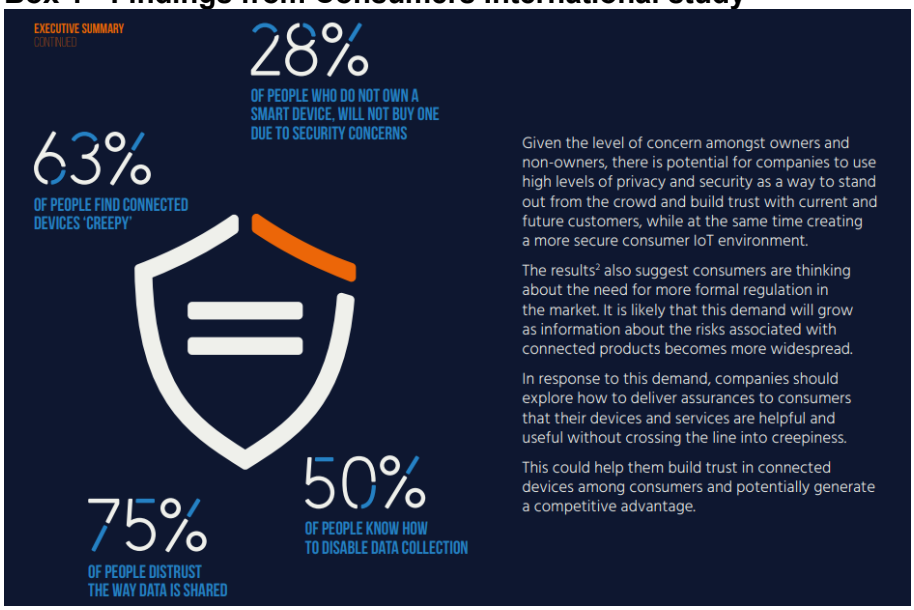
[1] See: http://www.shiftedenergy.com/

[2] See: https://cleantechnica.com/2019/11/02/utility-adds-2-5-mw-of-demand-response-capabilities-with-very-unusual-batteries/

A "social compact" for success

Consumer consultation is vital when discussing technical changes that directly impact the operation of a consumer's solar installation. A recent study by Consumers International[3] highlights the deep level of distrust of consumers regarding privacy and security protections of their personal devices. Box 1 provides a snapshot of the survey findings.

Box 1 - Findings from Consumers International study



Source: Consumers International and Internet Society, "The Trust opportunity: exploring consumers' attitudes to the internet of things, 1 May 2019, p3

The research underscores the importance of including consumers in the conversation on changes to their solar and smart metering installations.

Other research further supports that consumers want to be active partners in solving problems. For example, SAPN recently undertook an extensive consumer consultation on a program that would dynamically constrain solar generation when the network cannot cope with two way flows. The engagement drew on deliberative customer research and involved SAPN's customer council and key customer advocates. Based on the information provided and the opportunity to be heard, customers provided support for the proposal.

An extended consultation period and supporting communications program would significantly mitigate the "trust" risk. Vital to the success of the reform measures is that consumers have an informed understanding of how the returns they anticipate and calculate for their solar installations are impacted (and can be optimised) by third party control including export constraints.

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[3] Consumers International and Internet Society, "The Trust opportunity: exploring consumers' attitudes to the internet of things, 1 May 2019: https://www.consumersinternational.org/media/261950/thetrustopportunity-jointresearch.pdf

An effective communications campaign that informs consumers of key changes to solar installation and tariffs from September 2020, and longer term action around bolstering technology standards will minimise confusion, empower consumers to navigate solar marketing material and make informed purchase decisions. Further, additional time will allow industry to source compliant technology and develop attractive plans and offers that help consumers partner with industry to bolster system strength when needed; and ensure a robust and competitive distributed energy resources (DER) technology market.

In this context, we consider that wider and more inclusive consultation is required before changes are made to regulations. Should this occur, South Australia would effectively be setting the standard across the nation in developing and implementing a successful 'social compact' between government, consumers and industry.

We have seen in other sectors how effective multi-pronged approaches have successfully achieved policy outcomes. For example, the introduction of seatbelts as a safety and security measure was found to be effective because:

- Legislation required the use of seatbelts, which lead to significant numbers of seatbelts in cars; and also unlocked other value for vehicle owners in avoided expense and inconvenience of other safety measures; and
- National standards were developed and then refined to consider the needs of citizens around comfort and ease, as these needs directly related to improved compliance and palatability; and
- A favourable community attitude that was built on extensive engagement and awareness activities.[4]

What we can learn from these findings is that the Department's plans go some way to applying the learnings of previous successful public safety policy. These are regulatory changes to provide certainty to the market; and the development of standards to deliver the level of technical capability required to deliver on system security goals.

The value that additional time to implement the proposed suite of initiatives would be ensuring that design standards can meet consumer needs about rewarding consumers and providing opportunities for consumers to optimise their investment in energy management technology; ensuring that technical standards for DER can be applied nationally, as much as possible, to leverage the benefits of economies of scale and overall compliance; and so that the Department can meet consumers where they are and provide the tools and communications to help consumers set themselves up for positive engagement with the sector regardless of their personal situation or consumer type.

[4] See Milne, P.W. *Fitting and wearing of seat belts in Australia. The history of a successful countermeasure*, 1985. Accessed online at https://www.infrastructure.gov.au/roads/safety/publications/1985/pdf/Belt_Analysis_4.pdf

We can see several existing opportunities for national cooperation on technical standards. For example, the Australian Energy Market Commission (AEMC) is consulting on a rule change proposed by AEMO, to give AEMO the power to set initial minimum technical standards for DER. If the rule change is successful, AEMO would develop a national instrument under the National Electricity Rules setting out the minimum technical standards. We understand that AEMO is developing the technical standards in parallel to the rule change process. The AEMC is due to complete this rule change process in December 2020.[5]

A potential risk with South Australia's September 2020 implementation date for new technical standards is that the standards could be different to the national technical standards. This could have an impact on the competitiveness of providing DER in South Australia and consumers' ability to help build and participate in the future design of the energy system in South Australia.

Solutions that reward rather than penalise customers

The Department is proposing a prescribe-enforce approach rather than a framework that focuses on information and incentives for joint problem solving with customers.

Of greatest concern is that the new regulations can lead to fines of $10,000 for customers if they have not taken reasonable actions to install their solar, smart meter or other prescribed technology in line with the new technical specifications. In our view, the responsibility should not lie with the customer but with the installer. There is a high probability that a customer will not be in an informed position to require an installer to provide a certificate of compliance, particularly given the speed at which the change to regulations come into effect.

Our research demonstrates that solutions that provide information and incentives lead to higher levels of trust, participation and value for the customer. For example, our Energy Consumer Sentiment Survey shows that about 45 per cent of residential consumers are prepared to reduce their energy use during periods of high demand. An additional 25% of respondents indicated they would reduce their demand if there was an incentive to do so.

These results are supported by the experience in New South Wales and the Australian Capital Territory in February 2017. A call by governments for people to adjust their use led to a significant reduction in demand that helped avoid the need for load shedding. This demonstrates the incredible opportunity for the sector to partner with consumers to solve problems and create value.

Looking at success in other sectors, the recent rollout of digital television and the subsequent retirement of analogue television is a strong example of a scheme that rewarded people for their behaviour change, provided low cost options (and even free options for vulnerable consumers) for change, and delivered the intended policy outcomes of the government of the day.

[5] See: https://www.aemc.gov.au/rule-changes/technical-standards-distributed-energy-resources

In this rollout, we saw cheap, modular technology that bridged the gap between the old and the new technology – that is, the digital set top box. Set top boxes allowed people to move to the digital world "now" which allowed the natural replacement cycle to continue, while the falling costs meant people did not move into the digital world faster than anticipated. We also saw a significant mass media awareness campaign that brought consumers along for the ride and gave them the tools and information necessary to make decisions for themselves that also met the policy goals.

In that program, consumers were rewarded with a better service (both quality of supply and increased options for participation through more channels); the low-cost modular bridging technology allowed them to optimise their existing investment; and the goodwill generated by informed and empowered people meant the policy goal was achieved under "social compact" like conditions.

We consider that the minimum demand challenge is a mirror of the peak demand problem, and the same 'toolkit' of information and incentives should be considered to resolve the issue.

Other options that provide incentives for customers

We encourage the Department to consult with stakeholders on a wider range of options that may provide a more effective short-term solution to the imminent problem. Further these solutions are compatible with a framework that provides voluntary incentives for consumers. Some of our suggested solutions include:

- Incentives to shift load of hot water and pool pumps into the middle of the day. As referred to earlier in the paper, we understand that such initiatives have been applied successfully internationally such as Hawaii.[6] We also note that ARENA has provided funding for a customer trial of a solar hot water system which uses home energy usage predictions and weather data to optimally use excess solar PV to heat hot water, limit reverse power flows into the grid, and maximise homeowner economic benefits.[7]

- Critical peak pricing which provides rewards for customers to turn on their devices during periods, or reduce their output from solar. We consider such incentives would generate commercial interest from aggregators, who may be able to offer a market solution to the issue. Such schemes would focus on rewarding the consumer for providing energy services.

- Invertor control remediation program – our understanding is that some invertors already provide the capabilities that would be required by a new technical standard, but have been installed incorrectly. We consider that providing a financial incentive for customers to have their solar installation checked, remediated or updated by a registered agent would lead to a significant increase in

[6] See: https://www.globenewswire.com/news-release/2019/10/01/1923461/0/en/Shifted-Energy-to-Equip-2-400-Water-Heaters-in-Hawaii-with-Grid-Interactive-Technology-to-Create-Virtual-Power-Plant.html

[7] See: https://arena.gov.au/projects/smart-hot-water-system/

invertors capable of meeting the security needs of the energy system.

While we understand that each of these measures in isolation may not be sufficient to solve the problem, we consider that the Department may consider a suite of complementary measures that reduce the risk.

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