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7 March 2024

NSW Department of Climate Change,
Energy, the Environment and Water

Submitted via email to: energy.consumerpolicy@dpie.nsw.gov.au

Submission to the Consumer Energy Strategy: households – Consultation questions

Energy Consumers Australia (ECA) appreciates the opportunity to provide feedback on the Consumer Energy Strategy: households (Strategy) consultation questions.

ECA is the national voice for residential and small business energy consumers, and advocates for a future Australian energy system that works for, and benefits, the households and small businesses who use it. As such, we strongly support a Strategy which supports households to benefit as the energy system transitions to net zero emissions and as they increasingly use consumer energy resources (CER).

There are at least three reasons why this Strategy is so important.

First, it is well known that Australians are currently facing a cost-of-living crisis. Energy prices have increased by more than other essential services, with electricity prices increasing by 124% and gas prices by 145% since 2008.[1] CER provide different ways for consumers to manage their energy, and so their bills. Yet our regular *Energy Consumer Behaviour Survey* has identified a growing divide in ownership of CER between households who have the capability and opportunity, and those that don't.[2] This Strategy provides an opportunity to ensure that all consumers are able to benefit from the cost savings these technologies and services can deliver.

Second, achieving the NSW Government's target of net zero emissions by 2050 will need contribution from households and small businesses. To achieve this target, over the next two to three decades:

- 1.5 million homes in NSW currently connected to the gas network need to switch their hot water, space heating and cooking appliances from gas to electricity.[3]
- 6.8 million light vehicles in NSW need to be swapped for electric vehicles.[4]
- Up to 3 million homes will need to be renovated to improve their energy performance to manage higher electricity use and so bills.[5]

The Strategy should perform a central role in supporting consumers on this journey, and in this respect we are pleased to see the broad scope of what is considered CER – including energy efficiency and the electrification of gas.

Third, the 2024 Draft Integrated System Plan suggests that almost all new generating capacity expected to be installed in the future will be solar and wind.[6] The Strategy provides an opportunity to ensure that the potential pool of flexible demand, enabled through CER, is realised and can help balance the increasing amount of variable renewable energy in the system. Tapping into the flexibility of CER will bring down costs for consumers, but this will only happen if they are integrated in a way

[1] Energy Consumers Australia analysis of ABS data.
[2] ECA, *Energy Consumer Behaviour Survey* (October 2023).
[3] AER, *Schedule 2 – Quarter 1 2023-24 retail performance data* (December 2023).
[4] NSW Government, *Transport for NSW Registration statistics* (accessed March 2024).
[5] ABS data, *Snapshot of New South Wales* (June 2021).
[6] AEMO, *Draft 2024 Integrated System Plan* (January 2024).

designed with consideration to consumer needs and preferences, and where consumers are appropriately rewarded.

While Appendix A addresses the consultation questions directly, the remainder of this letter sets out some key points we would also like to emphasise.

We recommend that a comprehensive package of measures is adopted to deliver on the objectives of the Strategy. As noted above, CER are critical for delivering lower cost, clean and reliable energy, and to reach our net zero targets. Financial incentives alone are not sufficient to encourage consumers to invest in CER. Consumers also need access to the right information, at the right time, and from trusted sources to support their decision making. Our view is that a one-stop-shop is needed to support consumers on their journey, providing critical information, tools, advice and practical support to help them make CER-related decisions. For many households, additional information, tools and support are required to turn ability and intention into action. Examples of where this is being done well are:

- The **Energy Trust of Oregon**, which provides information and rebates to improve energy efficiency, free energy assessments, and contractor connection to residential and business customers. Households and businesses have saved $10.6 billion on their energy bills since 2002.7
- **Electric Ireland Superhomes**, which engages a team of advisors, specialists and contractors all under one roof (accredited by a public authority) to provide tailor-made subsidies and deliver home energy retrofits. The organisation aims to deliver 35,000 home retrofits by 2030, and between its launch in February 2022 and December 2023 enabled over 1,700 home upgrades, with an additional 800 applications underway.8
- **New York Energy Research and Development Authority**, which offers energy bill assistance, free energy audits, technical advice and support for qualified homeowners and renters. Since 1998, efficiency programs have saved enough energy to power 1.6 million homes each year.9

We would be happy to discuss this in more detail with the NSW Government, including our Pre-Budget submission to the Commonwealth Treasury (a request for funding for ECA to develop a business case for a one-stop-shop).

We recommend that energy efficiency be embedded in the Strategy as a core principle and that energy performance is viewed as 'the first fuel'. Energy efficiency is the cheapest way to meet consumers' energy needs – by improving insulation for example, people won't need to use as much energy to heat or cool their homes, saving on their energy bills.[10] Implementing energy efficiency measures across all of NSW could ultimately reduce the need for costly new generation and transmission infrastructure. Further, as households electrify, energy efficiency measures will become more important for managing electricity bills.

We recommend that the jurisdiction of the NSW Energy and Water Ombudsman is expanded to include all energy services. Currently when things go wrong the underlying issues can exist on both sides of the meter. For example, a consumer's problem with their energy supply will often result in a

[7] Energy Trust of Oregon, *2022 Annual Report to the Oregon Public Utility Commission & Energy Trust Board of Directors* (April 2023).
[8] Consumers International, *Designing a One-Stop-Shop for consumer renewable energy systems* (December 2023) p 39.
[9] New York State Energy Research and Development Authority, *Operations, Accomplishments, Mission Statement, and Performance Measurement Annual Report* (June 2023).
[10] EEC, *The World's First Fuel: How energy efficiency is reshaping global energy systems* (June 2019).

complaint about an energy retailer or electricity network, even though it was caused by the conduct of a solar retailer who is not a member of the Ombudsman scheme.[11] They must then make multiple complaints to resolve a single energy issue, and may not always get the resolution they are seeking. This lack of a single point of accountability or assistance frustrates consumers and reduces their trust in the energy industry and the energy transition.

Finally, we recommend that a Strategy is similarly developed for small businesses, as they also need to be part of this journey. Our recent report *Power over their Power: Small Business Perspectives on Energy* examines the particular barriers small businesses face in decarbonising, and key considerations for policy makers.[12] Additionally, our *SME Energy Consumer Information Research* provides advice on how best to communicate with small businesses regarding energy.[13]

Australia is at the vanguard when it comes to rooftop solar. With around one in three households with solar, we have the opportunity to develop world-leading policies that achieve affordable, clean energy for consumers, and integrate solar and other CER into the system to support better outcomes for consumers. The Strategy offers an opportunity for NSW to be a leader in the integration of CER.

If you have any questions or comments about the submission, or require further detail please contact Isabella Darin at isabella.d@energyconsumersaustralia.com.au.

Yours sincerely,

Dr Brendan French
Chief Executive Officer

Attachments:

Household and Small Business Energy Consumer Communications Research by Energy Consumers Australia, February 2024.

Evidence Base to Support the Development of an Effective Communications Campaign by The Shape Agency, April 2023.

[11] EWON et al, *Submission – Review of consumer protections for future energy services* (December 2022).
[12] ECA and SmallBiz Matters, *Power over their Power: Small Business Perspectives on Energy* (November, 2023).
[13] ECA, *SME Energy Consumer Information Research* (November 2023).

Appendix A: ECA response to Consultation questions

1. Are these the right objectives for a Household Energy Strategy?
   (a) Is there anything missing from the draft objectives? Is there anything that should be removed and why?

Currently, the draft objective is framed around increasing deployment/access/coordination of CER. We recommend more clearly articulating that the primary objective of this Strategy is to deliver better outcomes for NSW households. This is an important clarification, as while individual access to particular CER for all consumers may not be feasible, there may be other solutions, such as community-based CER options, that provide clean and low cost energy. Ultimately, the objective should guide decisions that result in improved outcomes for all consumers.

We also suggest that an additional element is added to the objective, namely "support households to transition off gas". This is important as it is impossible to ensure that consumers have access to affordable and sustainable energy in NSW without transitioning off gas.[14] As the objectives are currently written, this priority is not made clear.

Additionally, we echo the Public Interest Advocacy Centre's suggested amended objectives below.

The NSW Household energy strategy will support and contribute to a net zero emissions future for NSW, optimising benefits for all NSW households, the community and climate by:

- *Enabling and facilitating deployment of, and better household outcomes from, energy efficiency, electrification, advanced metering, household generation, flexible demand and storage.*
- *Improving equity of outcomes for all households through the transition to a more efficient net zero emissions energy system, including households who rent, live in apartments, live remotely, or have low incomes.*
- *Co-ordinating consumer energy resources to optimise the balance of electricity demand and supply and help maximise the efficiency of the energy system and minimise its costs to all NSW households.*
- *Building fairness by ensuring policy, regulation, rebates, supports and payment frameworks support a fair sharing of the costs and risks of the energy transition.*
- *Ensuring robust safety, quality, interoperability, performance and consumer protection standards for consumer energy resources and their suppliers.*

2. Are these the right principles for a Household Energy Strategy?
   (a) Is there anything missing from the draft principles? Is there anything that should be removed and why?

Regarding the *Transparency and consumer empowerment* principle, we note that having the information they need is not the only element to empowering consumers to participate in the energy system. While not currently included in the principles, having fit-for-purpose consumer protections is required to ensure fair and equitable outcomes for consumers. As such, we recommend this is explicitly included, along the lines of: *ensuring households are provided with the tools, information and protections they need to make informed choices to participate in the energy system*.

Regarding the *Equity and accessibility* principle, as above we note the distinction between supporting accessibility of CER and ensuring better outcomes for all consumers. We therefore recommend this

[14] ECA, *Stepping Up: A smoother pathway to decarbonising homes* (August, 2023); Grattan Institute, Getting off gas: why, how, and who should pay? (June 2023).

principle is reframed to reflect improved outcomes for consumers, including lower cost and cleaner energy. Furthermore, we note that income, where they live or their tenure are not the only reasons consumers may face barriers to accessibility of benefits. We recommend this priority consider addressing existing inequities, such as those experienced by First Nations communities and culturally and linguistically diverse communities.[15] Suggested wording would be: *ensuring the benefits of CER and the accessibility of energy products and services extend to all consumers in a way that addresses all types of inequity.*

3. What role do you see consumer energy resources playing in the energy system as it transitions to net zero emissions? Compare this role to consumer energy resources in commerce and industry, and to grid supplied energy.

CER should serve as the cornerstone of the energy system as it transitions to net zero. California has a "loading order" which mandates that "energy efficiency and demand response be pursued first, followed by renewables and lastly clean-fossil generation" as a means to meeting new energy demands.[16] We recommend a similar statement for the development of new energy infrastructure in New South Wales, which would prioritize the role of CER in meeting new energy needs.

A least-cost, least-risk, and most-participation energy system requires significant investment in CER. An energy system with a high proportion of CER is least-cost because it both lowers the bills of the consumer who own the CER and, when well-orchestrated and integrated, reduces the overall cost of the energy system. All CER can help avoid significant investments in network assets (which account for roughly 50% of the overall cost of the energy system) because they enable a more local energy system that serves the need for energy physically closer to where the energy is consumed.

Multiple studies demonstrate the financial benefits of CER. Energy efficiency is regularly regarded as the least-cost energy resource in the world. The ClimateWorks 2023 Report on *Climate Ready Homes*, demonstrates the clear benefits of improving the thermal efficiency of homes, combined with electrification—which makes appliances more efficient. It estimates that when combining thermal upgrades with electrifying hot water and cooking appliances, people living in detached houses could save on average between $1,850 and $2,200 a year off their energy bills.[17] Occupants of townhouses could save between $1,270 and $1,480 a year, and occupants in apartments between $1,030 and $1,200 a year. According to the *2019 Independent Review of the Greenhouse Gas and Energy Minimum Standards (GEMS) Act*, GEMS regulations that set minimum efficiency standards for appliances save the average Australian household between $140 and $220 on their electricity bill each year (about 10 to 15 per cent of the average annual bill).[18] In April 2022, ARENA published a report that found $8-$18 billion of consumer benefits from avoided generation and storage costs solely from the flexibility of a high "DER" scenario.[19] That study did not include the consumer benefits of avoiding network investments, but a 2021 Baringa study commissioned by the ESB found more than $11 billion in consumer benefits from CER flexibility just from avoiding or deferring network investments.[20]

[15] Awaworyi Churchill and Smyth, *Ethnic Diversity, Energy Poverty and the Mediating Role of Trust: Evidence from Household Panel Data for Australia* (January 2020).
[16] California Public Utilities Commission, *Integrated Resource Plan and Long Term Procurement Plan (IRP-LTPP)* (2021).
[17] Climateworks Centre, *Climate-ready homes: Building the case for a renovation wave in Australia* (December 2023).
[18] Commonwealth of Australia, *Independent Review of the Greenhouse and Energy Minimum Standards (Gems) Act 2012 Final Report* (June 2019).
[19] ARENA, *Load Flexibility Study Technical Summary* (April 2022).
[20] Baringa, *Potential network benefits from more efficient DER integration* (June 2021).

An energy system with significant CER is also significantly lower risk. In *Small is Profitable,* Amory Lovins outlines 207 benefits of distributed resources.[21] Many of these benefits account for the lower risk of smaller resources built closer to where energy is consumed and the shorter time required to build and deploy these resources. An energy system and transition dependent on a small number of centralised power plants that require new transmission lines to be constructed concentrates risk around both those power plants and the energy networks that connect them. By contrast, CER can be built more quickly without the need for any new network assets. Not only does CER tend to fail less often – and less spectacularly than large-scale power plants – when they do fail, they are cheaper and simpler to repair. Multiple small resources are less likely to simultaneously fail than one large resource, improving resilience.

Finally, a CER-heavy energy system capitalises on Australia's unique strength in the global energy transition: we lead the world in consumer participation in the energy system with rooftop solar. The Australian Energy Regulator's (AER) *State of the Energy Market 2023* report, notes that across the National Electricity Market (NEM), 23% of total generation is from rooftop solar, making it the largest generator in the NEM.[22] (Black coal is second, with 21%.) The Australian PV Institute estimates more than 30% of houses in most states and territories already have solar.[23] Queensland and South Australia lead the pack with an estimated 45% of dwellings with rooftop solar; New South Wales – where roughly 31% of houses are estimated to have solar ranks fifth among states and territories. Additional CER, particularly through new initiatives that more consumers can participate in – such as community solar banks, solar on apartments, and smart water heater demand response programs – offers an opportunity to build upon the success Australia has already had in the transition.

4. What do you see as the key barriers to increasing the uptake of consumer energy resources? Consider all types of consumer energy resources including energy efficiency, flexible demand, electrification, solar and storage.

There are multiple barriers to increasing the uptake and access of CER. Broadly, the barriers can be divided into three categories: ability, opportunity and motivation.[24] Each of these categories requires separate consideration and solutions to encourage consumers to invest in CER. Addressing one category, such as financial ability to invest, will not necessarily translate into action if people don't also have the opportunity and motivation to act. This is why a comprehensive approach is required if the NSW Government is to achieve its objectives.

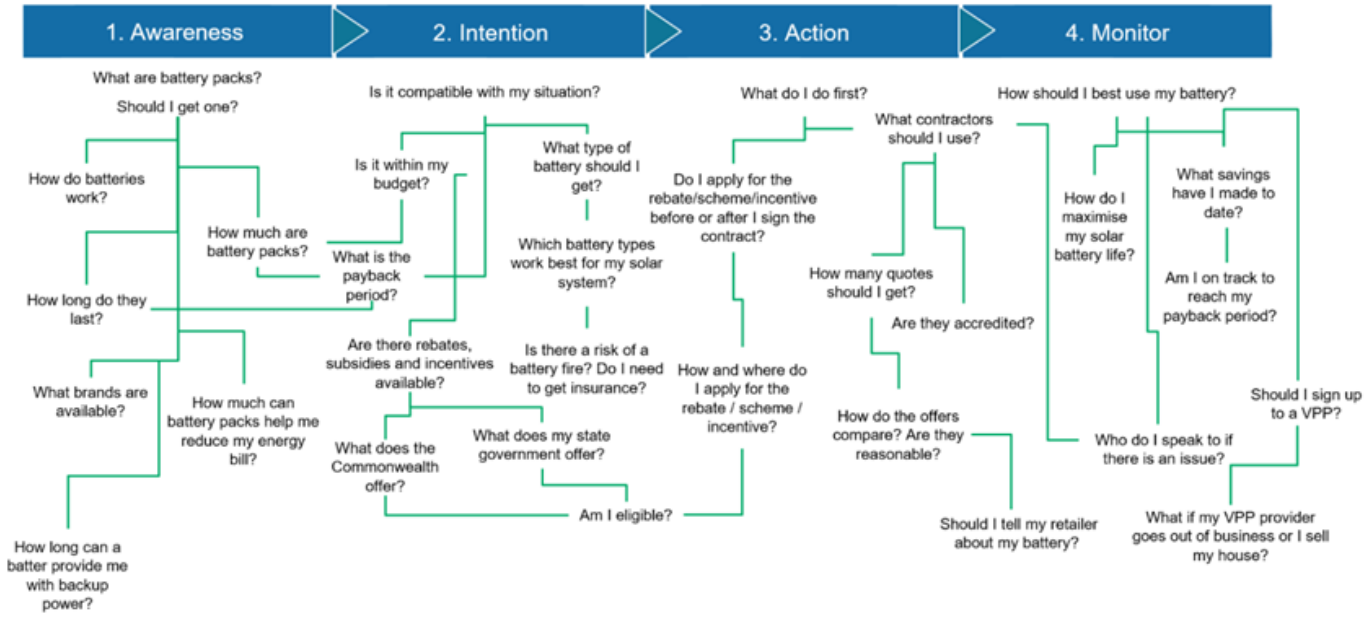
Broady, **ability** refers to people's personal circumstances that influence if they can take the necessary steps to understand whether – or which – CER may be right for them. Key examples include:

- **Financial barriers.**
  There are significant upfront costs for consumers to invest in all types of CER. While many of these will be obvious to a consumer (such as the cost outlay for solar and storage, including installation or changing an appliance from gas to electric), there are also many costs that may be unexpected. These include the cost of upgrading electrical wiring in their homes, which can be very costly, and charges for abolishing a gas connection. We note that the AEMC has recently suggested that governments consider funding arrangements to support remediation

[21] Amory Lovins, *Small is Profitable: The Hidden Economic Benefits of Making Electrical Resources the Right Size* (2002).
[22] AER, *State of the energy market 2023* (October 2023).
[23] Australian PV Institute (APVI), *Solar Map funded by ARENA* (accessed March, 2024).
[24] This framework was also used by Acil Allen in their report to the Energy Security Board on *Barriers and enablers for rewarding consumers for access to flexible ER and energy use*: Rapid evidence review (June 2022).

where site defects are detected as part of the smart meter rollout.[25] Such financial support could be used to leverage multiple consumer benefits, such as better access to CER.

- **Other personal circumstances.**
  Other factors may influence a household's ability to access CER. For example, digital literacy[26] and cultural and linguistic background can be barriers for consumers being able to undertake the requisite research and understand the potential options available to them.[27] These issues are exacerbated by the complex nature of energy markets. The figure below maps out the consumer decision making process for just one type of consumer energy resource: a battery. This diagram demonstrates how confusing the journey is for any individual, let alone one that might have additional barriers.



Opportunity refers to the circumstances that make it possible for someone to install CER. Key barriers in respect to opportunity include:

- **Housing ownership and housing type.**
  Only 52% of Australian households are stand-alone homes and owner-occupied.[28] Under current policy settings, landlords are not incentivised to improve the energy performance of their rental properties or invest in other types of CER such as solar and batteries since they do not typically receive the benefit of reduced electricity bills.[29] Units and other non-standalone dwellings also face additional challenges. Many of these buildings have shared energy services, like shared hot water provided by a central boiler, and changing these services can require agreement from all, or a majority, of owners. They also have limited roof space for

[25] AEMC, Review of the regulatory framework for metering services (August, 2023).
[26] RMIT et al, *Measuring Australia's Digital Divide. Australian Digital Inclusion Index 2023* (2023).
[27] Ethnic Communities Council of NSW Inc, *Experiences of Energy Consumption for Culturally and Linguistically Diverse (CALD) communities* (April, 2016) p 26.
[28] ECA, *Stepping Up: A smoother pathway to decarbonising homes* (August, 2023) p 8.
[29] ECA, *Submission to the National Energy Performance Strategy Consultation Paper* (February, 2023) p 24.

solar, and challenges in sharing the costs and benefits of solar. We discuss these further in our *Stepping Up* report.[30]

- **Lack of skilled workforce.**
  There is already a national shortage of workers in key occupations to support uptake of consumer energy resources, particularly those in the electrical trade.[31] Without policy interventions this issue will increase as households increasing adopt consumer energy resources. Equally, the existing workforce does not necessarily have the skills, awareness or motivation to provide consumers with advice on replacing gas appliances that have failed with efficient electric alternatives. For example, when a gas hot water system fails, typically these need to be replaced urgently on a like-for-like basis, and consumers may not have the right information, advice or time available to investigate alternatives.
- **Lack of supply.**
  For some CER there is already a lack of supply, which may increasingly become an issue as uptake increases if industry doesn't keep pace (and without government support). For example, for transport electrification to date, a main barrier has been the low supply of models, particularly more affordable options.[32] This is also the case for electric water heating technologies.[33]
- **Structural barriers.**
  Regulations and policy can also delay or obstruct uptake. For example, current energy laws and rules do not facilitate a managed retreat of the gas network. Rather, they assume that gas network businesses will continue to invest in – and earn a return on – gas infrastructure assets. Similarly, state planning laws and regulations in NSW do not provide any incentives for consumers to switch off gas, or for developers to stop installing gas connections.

Motivation refers to whether a consumer will act on their ability and opportunity to install solar. Barriers to motivation include:

- **Lack of clear policy direction.**
  Our December 2023 *Energy Consumer Sentiment Survey* finds that only one in five households in NSW think that how the transition to renewable energy will affect them has been clearly communicated.[34] Our *Energy Consumer Behaviour Survey* finds that only a third have considered converting their homes to all-electric[35]. This falls short of the ACT, where 55% of households have considered going off gas. We note that the ACT has developed a clear policy for achieving electrification.
- **Lack of easy to access, trusted information.**
  Research commissioned by ECA found that of those households that had looked for information on reducing their energy use and bills, many found it hard to source the information they were looking for (43%) and too often the information they could find was neither relevant nor easy to understand.[36] In addition, household energy consumers reported that the information about energy they were receiving was often not from organisations or channels that they trust. Lack of accessible and simple information is a significant barrier to consumers investing in CER. Existing approaches to resolving information gaps tend to focus on expanding consumer awareness and information but place the onus on the consumer to

[30] ECA, *Stepping Up: A smoother pathway to decarbonising homes* (August, 2023) p 8.
[31] ABC, *Electricians are in high demand, so why are almost 40 per cent of apprentices considering quitting?* (August, 2022).
[32] Electric Vehicle Council, *State of Electric Vehicles* (July 2023).
[33] UTS, *Domestic Hot Water and Flexibility* (June 2023).
[34] ECA, *Energy Consumer Sentiment Survey* (December, 2023).
[35] ECA, *Energy Consumer Behaviour Survey* (October 2023)
[36] Energy Consumers Australia, *Household Energy Consumer Information Research* (November 2023).

follow through and make the decision. In a market where there is low trust and complexity, this approach is unlikely to be successful.

5. Should the uptake of consumer energy resources be encouraged by the NSW Government? Why or why not? If yes, what are the best ways to do this?

Yes, the uptake of consumer energy resources and ensuring consumers can access their benefits should be encouraged and supported by the NSW Government. CER provide different ways for consumers to manage their energy consumption and bills; it can perform a central role in the NSW Government achieving its net zero targets; and it provides opportunities for flexible demand which is important to balance the increasing amount of variable renewable energy in the system.

As we outline in our *Stepping Up* report, governments need to "step up" to smooth the path for households to decarbonise (which will inevitably be expensive and disruptive for many consumers). While for some, access to the right information at the right time from a trusted source will be sufficient, others will also require financial support and more hands-on assistance. Complementary government policies are needed that enable or mandate as needed, the changes required so that the necessary infrastructure and processes are in place to ensure good outcomes for all consumers.

Specifically, we recommend:

- **Supporting consumer agency to increase ability and motivation**
  - Explain to consumers why they are being asked to change the way they use energy, so their expectations about the energy transition are clear. Our *Energy Consumer Sentiment Survey* tells us that consumers feel more positive about the transition if they feel they have received clear communications about it.[37]
  - This is best achieved through clear policy on the future direction of energy, including getting off gas (discussed further below), and a communications campaign that provides targeted messaging across all segments of our communities.
  - Ensure the provision of trusted and independent energy advice and support, to ensure consumers can make the choices that best suit their needs and circumstances now and in a more complex future energy market.
  - Inform consumers on issues such as where to find reliable advice and technical support, assessments of their energy needs, how to find reliable tradespeople and where to access funding and finance.
  - We consider these last two actions are best achieved via a one-stop-shop; which should cater for the range of different barriers that individual consumers may face in making and acting on energy decisions that are right for them. These include poor literacy and numeracy skills, access to finance and cognitive load. Please see our response to question 8 for more detail.
- **Financial support**
  - The Commonwealth Government's Household Energy Upgrades Fund's initial package of $206 million is intended to support over 30,000 NSW households, much of it social housing, to upgrade their homes. This includes energy efficiency measures and solar. This is a great start, but more is required to ensure all 1.5 million homes in NSW are future-ready. As such, we recommend this program be expanded and complemented with other programs that target households with different levels of ability to pay. This should include:
    - enabling free or low-cost finance options to help households improve their energy performance and access CER.

[37] ECA, *Energy Consumer Sentiment Survey* (December, 2023).

        - grants or subsidies targeted to those least able to afford to improve their energy performance and access CER.
    - These programs need to be well publicised across all segments of the community by trusted sources to encourage uptake. A one-stop-shop could have a role to play here, potentially in administering the funds, rebates, subsidies and/or loans, or supporting consumers to apply for these (or doing so on their behalf). In Ireland, for example, the one-stop-shop supports consumers to access grants provided by the Government of Ireland and administered by the Sustainable Energy Authority of Ireland.[38] They also provide a list of financing options through banks and credit unions.
- **Structural policies to enable change**
    - Improve access to low-cost EVs and charging infrastructure, particularly for those who face barriers to charging their EV at home. This could be through government-supported development of more public charging infrastructure. For example, the City of Sydney has partnered with Ausgrid to conduct a trial of on-street electric vehicle charging.[39]
    - Provide funding, develop new policies and standards and/or remove red tape to allow those in rental properties and apartment blocks to access clean technologies and energy efficiency measures to address barriers to these households decarbonising. Recommendations are further discussed in response to question 13.
    - Develop a plan to ensure the safe and orderly decline of the gas network in a way that does not leave a high financial burden or unsafe service for the last households using the gas network. As more households electrify, gas bills for those that remain on the network will increase.[40] The last households left on the gas network will face significantly higher bills for energy than those who have already electrified, those last households are likely to be those that can least afford higher energy bills. Further, a decline in gas customers could cause potential risks for the operation and safety of the network (e.g. difficulty maintaining the pressure in gas pipelines). These issues must be addressed in a clear and coordinated way.

Certainly, consumers expect this support from governments. In recent qualitative research we undertook, consumers tell us they want government in control of the transition not industry. They expect government to provide clear, consistent and timely information, and create regulations to protect them.

6. Should the government set specific targets for household energy products, technologies or services?

We support setting specific targets, as a suite of policy measures which include providing tailored advice and support, robust standards, minimum requirements, and consumer protections and regulations. This can provide confidence both to households (when making these investments) and industry.

(a) What are the benefits, risks and other considerations in setting targets for consumer energy resources?

We recommend that the Strategy establish a clear timeline that outlines short-term (2025-2030), medium-term (2031-2040), and long-term (2041-2050) milestones and priority actions in a

[38] Consumers International, *Designing a One-Stop-Shop for consumer renewable energy systems* (December 2023) p 39.
[39] See the City of Sydney's website.
[40] ECA, *Stepping Up: A smoother pathway to decarbonising homes* (August 2023).

manageable and staged approach, to enable a smooth pathway for consumers. These should also be reviewed and reported on at these junctures, to ensure as such.

We further recommend that the Strategy seriously consider how to address the potential perverse outcomes of setting 'gross' targets for specific household energy products, technologies and services. For example, the Strategy must ensure that assets that households are adopting are of good quality. We have seen examples of hot water heat pumps where premature product failure and a wave of warranty claims have emerged as several large supplies operating in state-based energy efficiency schemes are focused on chasing the rebates.[41] Equally, it is important that targets are developed with consideration to equitable outcomes – with a focus on ensuring households who have the least opportunity to access CER are those prioritised.

(b) Which technologies may benefit from targets?

While we note that targets already exist in NSW for installing energy efficient equipment and appliances and reducing peak electricity demand (in the Energy Savings and Peak Demand Reduction Schemes), we emphasise that improving household's energy efficiency, enabling electrification of buildings and transport, and empowering consumers to benefit from load shifting and behaviour change are among the least risk and most cost-effective solutions for both consumers and to reach net zero goals.[42] Consequently, we recommend that the scope of these Schemes is broadened to capture the household energy products, technologies and services that can enable this.

Further, when discussing targets, we have previously emphasised that energy performance improvement should not be considered an individual action, but as an imperative and systemic approach to achieving a least total-system-costs energy system.[43] In our submission to the National Energy Performance Strategy we recommended the following relevant targets:

- All homes have undergone a thorough assessment of their energy efficiency by 2033, including their energy performance improvement potential.
- There is a mandatory disclosure of energy efficiency ratings on point of sale or lease in place for all homes by 2025.
- Renovations to improve energy performance have doubled by 2035 for residential buildings, with specific focus on the most impactful solutions that deliver comprehensive benefits across energy consumption and costs, indoor air quality, thermal comfort and wellbeing.
- All existing homes below 3 stars in the NatHERS rating must be upgraded to at least 5 stars by 2035, and then to at least 7 stars by 2040; by 2050, all homes must range between 8 and 10 stars according to technical capabilities and cost effectiveness.

With respect to electrification and the need for consumers to transition away from gas, this requires immediate action and signals from the NSW Government. We recommend immediate consultation on bans of new residential and small business mains gas connections. Homes that are built to be all electric are cheaper to run, result in lower emissions, and there is growing evidence that they are better for people's health.[44] Ensuring that new builds are all-electric will also save existing gas customers money, as it avoids the significant network costs associated with connecting new customers. Jemena gas distribution network has made a preliminary forecast of $269m of capex to connect new gas users to its network within 2026 to 2030 alone.[45] These costs will be added to

[41] DCCEEW, *Heat pumps - emerging trends in the Australian market* (September 2023) p 48.
[42] EEC, *Clean Energy Clean Demand: Enabling a zero emissions energy system with energy management, renewables and electrification* (April, 2023).
[43] ECA, *Submission to the National Energy Performance Strategy Consultation Paper* (February, 2023) p 21.
[44] ECA, *Stepping Up: A smoother pathway to decarbonising homes* (August, 2023).
[45] Jemena, *Jemena Gas Networks Draft 2025 Plan* (February, 2024).

Jemena's regulatory asset base, which increases the costs paid by Jemena's remaining customers into the future.

As such, the NSW Government should send clear signals (through targets) to consumers that they will need to transition away from gas to decarbonise their homes, as well as communicate the benefits and support them to do so. A good example of this is the ACT Government's Integrated Energy Plan.[46] The communications are relatively straightforward - consumers will not be able to use gas after 2045, when their gas appliance needs replacing it should be replaced with an electric one, and doing so will save money and reduce emissions. Critically, consumers are also supported to make decisions that are right for their circumstances via an online tool, developed by the ACT Government in collaboration with Choice. Our research finds that ACT households are more likely to be thinking about transitioning off gas than other jurisdictions in Australia, which suggests the benefit of this clear communication.[47]

Government support will also be required to help renters and financially vulnerable consumers transition off gas. The NSW Government should consider this when designing minimal rental standards and the other CER support it provides. We provide more information in response to these specific questions below.

(c) How should the government set and monitor the achievement of targets?

Please see our response to 6(a).

7. Should the NSW Government provide incentives to encourage the uptake of consumer energy resources? If so, what type of incentives and why?

Yes, we recommend that the NSW Government provide incentives to encourage the uptake of CER. As said above, some consumers will require financial support and more hands-on assistance to access the benefits of CER, and moreover some are better placed to bear the costs than others. At the very least, funding is needed to support households in NSW that will face significant barriers.

We recommend:

- Expanding support of the Household Energy Upgrades Fund.
- Providing access to free or low-cost finance options to help consumers electrify.
- Providing grants or subsidies targeted to those least able to afford to decarbonise.

Concerning improving the energy efficiency of households, research by Climateworks underlines the case for active government support and intervention. It finds that reliance on market forces alone will not generate the action required, as renovation levels are significantly more cost-effective for society than they are for households.[48] For example 'climate-ready' thermal upgrades on average will not be cost-effective for households without financial support, while 'quick fix' and 'modest' upgrades will only be cost-effective for approximately half of households.

Further, our housing research indicates that consumers welcome the idea of governments providing incentives to drive change on energy efficiency – 75% of participants supported incentives for homeowners and landlords, which they thought ensured everyone could 'do their bit'.[49] Consumers wanted any incentive scheme to be well-managed, and not encourage scammers or rorters. Their suggestions for incentives included tax deductions, grants or zero interest loans. Participants also

[46] ACT Government, *Make Your Next Choice Electric* (2024).
[47] ECA, *Homeowners are increasingly considering swapping gas appliances with electric ones* (January 2024).
[48] Climateworks Centre, *Climate-ready homes: Building the case for a renovation wave in Australia* (November 2023) p 6.
[49] ECA and RENEW, *Energy Efficient Housing Research* (August 2022) p 44.

wanted guidance on how to go about making upgrades – several mentioned online calculators to help homeowners decide what modifications were best, and the potential savings.

(a) How could the NSW Government make better use of the Energy Security Safeguard schemes to provide incentives for the uptake of consumer energy resources by households?

We recommend reviewing the Energy Security Safeguard schemes, with the view to align them with the objectives and principles of the Strategy. Importantly, as recommended in response to question 6(a), milestones should be set to track and review the impact of these programs, to ensure they are delivering good outcomes for consumers.

Particularly we recommend that these schemes are reformed to:

- Ensure they are equitable and target those who face significant barriers to accessing CER, particularly lower income households. This is important as programs targeting these households are likely to have the greatest impact.[50]
- Expand the scope to capture a broader range of CER upgrades. For example, in the ACT Government's Sustainable Household Scheme, eligible households can access interest-free loans of up to $15,000 to purchase efficient CER which include:[51]
  - rooftop solar panels
  - household battery storage systems
  - hot water heat pumps
  - electric stove tops
  - electric vehicles
  - electric vehicle charging infrastructure
  - ceiling insulation
  - installation costs for these products.

(b) What other types of incentives should the NSW Government use for the uptake of consumer energy resources (such as government programs for specific types of household or specific technologies, loan programs etc)?

Please see our response to questions 7 and 7(a).

Additionally, ECA's *PowerShift* research has some interesting insights on energy efficiency incentives, examining the effectiveness of the *Low-Income Energy Efficiency Program*. The research found that:

- Initiatives which achieved the greatest energy reductions focused on training, gamification with digital engagement, and a home energy visit with major retrofits.[52]
- The success of using incentives as an engagement tactic varied depending on the consumer segment – with a key recurring theme being that a one-size-fits-all approach does not work, as key motivations were different for each segment. For example, for some, incentives had negative associations, such that community over individual incentives were preferred.[53]

[50] Darren Sinclair et al, *What would it take to get Australians to buy electric cars? Canberra provides a guide* (accessed March 2024).
[51] ACT Government, *Sustainable Household Scheme* (2021).
[52] ECA, *PowerShift Final Report* (February 2020).
[53] ECA, *Driving Change: Identifying what Caused Low-Income Consumers to Change Behaviour* p 90.

(c) What do you see as the main benefits and risks of mandating a minimum rate for a solar feed-in tariff?

At this stage, we do not think that the benefits of introducing a mandated minimum feed-in tariff (FiT) outweigh the risks.

The main benefit of a minimum FiT would be to ensure that retailers fairly reward consumers for the solar they export to the grid and increase consumer confidence. However, we can see from the following table that FiTs in NSW are generally among the highest on the eastern seaboard, notably higher than in Victoria which does have a mandated minimum FiT.

Average FiTs offered by retailers by jurisdiction – July 2022 and July 2023

	New South Wales	Victoria	Queensland	South Australia
Jul-22	8.6	7.0	6.4	5.2
Jul-23	8.2	6.6	8.6	6.6

Source: Vinnies Tariff Tracker

The main risks to consider from the implementation of a minimum FiT are:

- If minimum FiTs are too low: market prices could be lower than what otherwise would be expected in a fully competitive market.
- If minimum FiTs are too high: Doing so could result in cross subsidies where non-solar / battery customers are subsidising the FiTs for those with the solar / battery.

FiTs have reduced significantly in recent years to reflect lower daytime wholesale spot electricity prices. However, peak wholesale spot electricity prices have increased, meaning that wholesale spot prices on average across the day have increased.[54] This means that consumers are not fairly rewarded for the exports that they make during times that the grid needs the electricity. As such, flat FiTs may no longer be appropriate, or fair, moving forward.

We therefore suggest consideration for whether a mandated minimum peak / nighttime FiT could have some merit to ensure that customers with a battery are fairly rewarded for exports during peak times.[55] Higher peak FiTs would naturally make the business case for a battery better for a consumer and may therefore increase the number of batteries consumers purchase for their homes. These investments would benefit all consumers (e.g. through reducing the need for more large-scale generation and network investments, and lower emissions). AEMO's Integrated System Plan highlights how important the rapid uptake of small-scale batteries will be to a least-cost energy transition in NSW.

(d) How can the NSW Government complement national programs to support the uptake of consumer energy resources?

Generally, we see that a coordinated and proactive approach across Australia is needed to best support consumers to benefit from CER – and recommend that the NSW Government engage with other jurisdictions to ensure this. There are clear opportunities to identify the gaps for consumers and where the NSW Government is best placed to respond, as well as share relevant learnings across jurisdictions.

We note that the Energy and Climate Change Ministerial Council has recently announced a number of measures, including the Consumer Reform Package, the National Consumer Energy Resources

[54] AEMO, *Quarterly Energy Dynamics (QED)* (accessed March 2024).

[55] In saying this, we are unclear as to how many time-varying FiT offers are available for consumers in NSW and note that many battery customers may choose to participate in a VPP product.

Roadmap, and the Electricity and Energy Sector Decarbonisation Plan; as well as having the following underway:

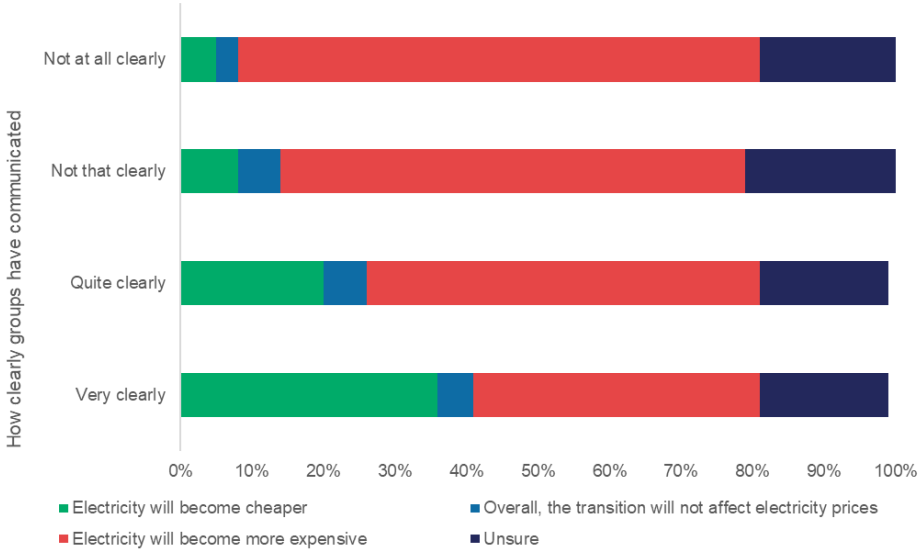
- The National Energy Performance Strategy
- The National Electric Vehicle Strategy
- The First Nations Clean Energy Strategy

One of the challenges we see is communicating these measures to consumers, as there are a range of policies underway which will impact and can support consumers' choices on CER. In this context we emphasise the need for a trusted single source of truth, which we see as a one-stop-shop (please see our response to question 8 for more detail on this).

8. How important is access to the right information about consumer energy resources compared to other barriers (such as upfront costs, tariff structure, the split incentive between landlords and tenants, and strata building issues)?

We do not believe this needs to be a zero-sum scenario.

Our latest *Household Energy Consumer Information Research* identifies that access to the right information (that is clear and ideally links actions to the cost benefit for consumers) at the right time and from trusted sources is crucial for consumers.[56] Clear communications for consumers on all aspects of energy information is crucial. Our December *Energy Consumer Sentiment Survey* shows that when consumers feel they have received clear communications from governments, they feel more positive about the energy transition.[57]



Source: Analysis of ECA's *Energy Consumer Sentiment Survey* (December 2023)

Our *Stepping Up* report (August 2023) identifies the average household in Australia will see a cost benefit of around $2,250 a year from 2030 from going all-electric and undertaking energy efficiency measures (compared with a fossil-fuelled household).[58] Households with solar and batteries will save an additional $1,500. There are significant cost benefits from CER for consumers – but the barriers for particular demographic groups will be significant. In particular, renters, people on low incomes and

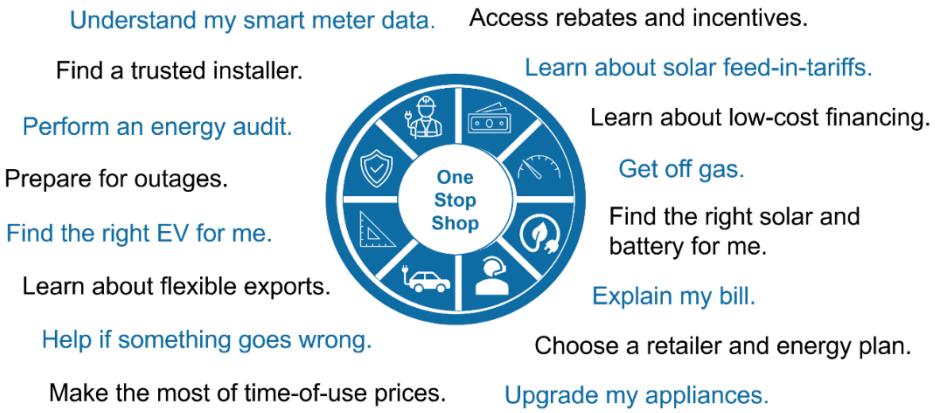
[56] ECA, *Household Energy Consumer Information Research* (November 2023).
[57] ECA, *Energy Consumer Sentiment Survey* (December, 2023).
[58] ECA, Stepping Up (August 2023) p .14.

people living in apartments risk being left behind in the energy transition and will require additional financial supports to be able to benefit from CER, energy efficiency and going all-electric.

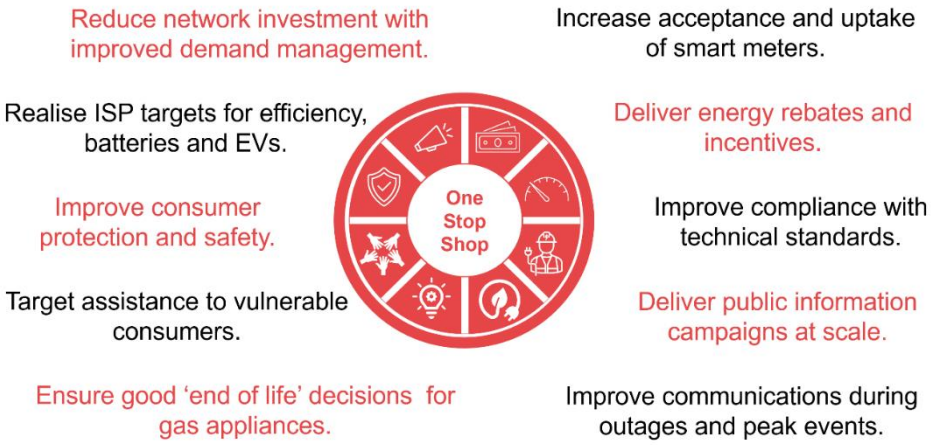
Our research identifies a need for consumers to have a trusted source they can go to for the energy information they want, in the format they want it, at the times they need it. As noted in our cover letter, we are advocating for the nature of consumer support in the energy sector be fundamentally refocused toward more practical enablement and delivery, in the form of establishing a one-stop-shop**.** They can take different forms depending on the particular market circumstances and objectives but the underlying theme is to act as a trusted service throughout the whole consumer journey to better enable consumer participation and lower costs – both for the individual and the energy system. We would be happy to discuss this in more detail with the NSW Government, including our Pre-Budget submission to the Commonwealth Treasury.

Examples of the types of decisions that a one-stop-shop could support are set out in the diagram below; as well as how informed decisions by households and small businesses will deliver benefits to the wider energy system.

<u>How a one-stop-shop can help consumers...</u>



<u>...and deliver system benefits and ISP targets</u>



Our regular *Energy Consumer Behaviour Survey* has identified a growing divide in ownership of CER between people who own a house and people who live in apartments, rent or identify as being under financial pressure.[59] These people are also frequently younger. Our *Household Energy Consumer Information Research* has identified that these cohorts also feel less engaged with the market, less hopeful about the future, and less sure of their ability to take actions that will enable them to take part in the energy transition.[60] Their inclusion in the transition will be crucial to its success and it is vital that solutions, such as a one-stop-shop, include clear communications, advice and support not only for homeowners but for these other cohorts too.

9. What are your views on implementing residential energy performance disclosure in NSW?

ECA recommends that NSW mandate disclosure of energy efficiency ratings of a home on sale or lease as soon as there are robust and accurate rating tools in place.

Poor energy efficiency in a home has a direct and material impact on people – it makes it hard to manage their energy usage in order minimise their bills, and adversely affects their health and wellbeing. Making homes more energy efficient is a critical pathway to achieving affordable energy in 2050, and ensuring our homes are climate resilient.

Consumers have told us they strongly support mandatory disclosure – they believe it would add value to their homes, and help them with decision-making.[61] But they are struggling to identify what are the most impactful actions they can take, and what they should do first.

There is robust evidence pointing to the value of mandatory disclosure. The European Union's Energy Performance Certificates (EPCs) scheme, for example, was created in 2010 and its use has seen the increased value of energy efficient buildings reflected in sales and rental prices.[62] EPCs not only rate the home, they also include recommendations on how the home's energy efficiency could be improved, as well as cost-effective ways to do so, including available financial instruments.

(a) What are the key challenges?

We see two key challenges to residential energy performance disclosure:

- Building consumer trust and confidence in the system, to encourage people to prioritise energy efficiency improvements; and
- That relying on the market to drive disclosure will be too slow to build industry capability and – if not appropriately managed – runs the risk of undermining consumer confidence in ratings.

RMIT's report – *Improving the energy performance of homes in Australia* – underlined that building a trusted system on home energy assessment requires:[63]

- robust and accurate rating tools that are easily understood and comparable; and
- assessors who are qualified, audited, and independent.

We have therefore strongly supported the work being done by NSW with other jurisdictions to develop a robust performance ratings system, and the development of the *National Framework for Disclosure of Energy Performance Standards*.[64]

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[59] ECA, *Energy Consumer Behaviour Survey* (October 2023).
[60] ECA, *Household Energy Consumer Information Research* (November 2023).
[61] ECA and RENEW, *Energy Efficient Housing Research* (August 2022).
[62] European Commission, *Final report - Building Certification Scheme*s (November 2014).
[63] The Residential Efficiency Scorecard, *Improving the energy performance of homes in Australia* (January 2023).

We note that there is no evidence that a voluntary disclosure scheme will incentivise homeowners or landlords to improve the energy performance of their homes. This has been acknowledged by key industry peak bodies. For example, the Property Council of Australia, Green Building Council of Australia, ASBEC, and Energy Efficiency Council have called for mandatory disclosure, noting that "when consumers purchase a fridge or a television, they can see its energy performance, but when they purchase a house there is no information available. This information gap is leading to suboptimal outcomes for occupants and an Australian housing market that is trailing similarly developed economies on energy performance."[65]

(b) What, if any, transitional measures would be needed before disclosure of residential energy performance could be mandatory?

We have welcomed the work undertaken by jurisdictions through the COAG Trajectory for Low Energy Homes, including through the National Framework.

Given the benefits of disclosure, we have recommended it be introduced as a priority as soon as accurate energy performance ratings tools are in place for NCC Class 1 homes. We are aware that the development of those tools may be slower for NCC Class 2 homes, such as apartments and multi-unit dwellings, but would not see that as a reason to defer rolling out mandatory disclosure.

Given the potential benefits of disclosure for consumers, we see that the primary transitional measure required is a comprehensive communications strategy with two key aims:

- To ensure that consumers understand its value to them: consumers will need reassurance that these ratings are independent, robust and trustworthy (Government's involvement in their development will be seen as a positive); and
- To ameliorate any concerns about the impact of the measure: Our research indicated that there will be people who are concerned about the impact of receiving a poor rating - landlords and a few mainly older participants were concerned that it might reduce the value of their property.[66] We need to be able to address those concerns, and ensure that people know how they can easily plan to improve the rating.

Pointing to the operation of similar schemes, such as in the ACT over the last 20 years, should help assuage consumers' concerns.

(c) What complementary policies or initiatives would help households to improve the performance of homes they are living in, selling or leasing?

Reviewing the experience in other jurisdictions, the RMIT research found that where there is low awareness and/or trust, successful disclosure depended on

- Mandating information on sale or lease; or
- Financial incentives – the number of assessments using Victoria's Residential Energy Efficiency Scorecard, for example, has increased significantly following its inclusion in the Victorian Energy Upgrades Program, where households are offered an audit free or at a subsidised price.

[64] Australian Government, *Draft: National Framework for Disclosure of Residential Energy Efficiency Information* (December 2021).
[65] Green Building Council of Australia et al, *Every Building Counts* (2023).
[66] ECA and RENEW, *Energy Efficient Housing Research* (August 2022).

Our research is indicating that consumers understand the benefits of energy efficiency, but low numbers are actively planning action. To help people undertake what can be complex, expensive and disruptive upgrades to their homes, we need to reduce barriers to action. The two major barriers are financial capability and a lack of information/awareness about what are the most impactful measures they can undertake.

We recommend the NSW Government therefore focus on the following areas as a priority.

The first is reducing financial barriers to action. At a time when we are seeing increased numbers of households saying they are struggling to pay their energy bills,[67] governments must acknowledge that people need help to act. And that different types of consumers need different assistance. The Brotherhood of St Laurence's recent research on the barriers faced by low-income households to electrification underlines that households can face multiple stressors, and people need support tailored to their circumstances.[68]

There are a range of financial incentives – grants, rebates, low or no interest loans or tax relief – that will encourage action, but there is an evidence gap to understand how they meet the diversity of need. Are grants more or less effective than tax relief for landlords? We would recommend mapping the journey of different customer segments, to understand better the decision points and what types of help will assist depending on your circumstances.

The second is to consider how to help people make a plan. Our research indicates that people need help to understand what are the most impactful actions they can take within their budget, and help plan for future improvements.[69] An example of a best practice approach is the EU Building Renovation Passports which not only provide a rating, but also a long-term renovation roadmap that identifies retrofits and installations to decarbonise the property, as well as links to contractors, other service providers and finance options.[70]

One of the benefits of this approach is that it provides homeowners and landlords with a medium-longer term plan to improve energy efficiency. The Renovation Roadmap/Passport "presents renovation as a home-improvement plan, not just as a technical intervention. It is based on the occupant's needs and specific situations (e.g. age, financial situation, composition of the household, etc.) and outlines each step and links proposed measures. By doing so, owners can fully understand and embrace the project. The Passports can also link to a logbook, a (digital) repository where the building's information can be stored and updated. The type of information stored can evolve over time and could range from available financing options for renovation projects (e.g. green loans, incentives, tax credits) to energy bills, smart meter data, equipment maintenance requirements as well as insurance and property plans and obligations. All this information could be made available to property owners and, under specific conditions, to other relevant users (e.g. public authorities)".[71]

10. What are the priorities for improving communication of information in terms of:
    - Types of households?
    - Tech?
    - Tariffs?
    - Consumer rights and protections?
    - Government or industry programs?

[67] ECA, *Understanding the Energy Divide* (December 2023).
[68] BSL, *Enabling electrification: addressing the barriers to moving off gas faced by lower-income households* (2023).
[69] ECA and RENEW, *Energy Efficient Housing Research* (August 2022).
[70] Buildings Performance Institute Europe, *Building Renovation Passports: Consumer's Journey to a Better Home* (2017).
[71] https://bpie.eu/wp-content/uploads/2017/09/Factsheet_D-170918_Final-2.pdf

- Other topics or issues?

(a) Which of these are best done by:
- Industry or non-government bodies
- The NSW government
- The Commonwealth government

We have recently provided a workshop to NSW Government on all matters covered in this question. A recording of this workshop has been provided and is available for the NSW Government here

We have extensive research in this area and would be very happy to talk to the team involved in the Strategy about it in detail. The research includes:

1. Desktop review of jurisdictional communications campaigns and energy information campaigns from overseas, including information on what works to improve communications with consumers (attached).
2. Summary Slide deck on the Household and Small Business Energy Consumer Communications Research (attached).
3. Household Energy Consumer Information Research report.[72]

For all the topics listed, consumers need:

- the right information (simple, relevant information with one simple 'action' that they need to take – ideally providing the information they need to conduct the action and linked to the cost-benefit to them of taking that action)
- at the right time (there are specific times when consumers want to receive, or will search for, information about energy)
- Using the right channels (the channels consumers prefer, which may not be the same as those governments prefer)
- From trusted sources (we have conducted extensive research in this area – most consumers rank consumer advocacy organisations, federal and state governments in particular as 'higher trust')

Our research reveals consumers have clear preferences for the organisations they trust to receive energy information from. In NSW household consumers top 3 trusted sources for energy information are (and the results are similar in all jurisdictions):

- Consumer advocacy organisation (such as CHOICE or ECA), 47%
- Federal government, 36%
- State government, 36%

Based on the consumer requirements we have identified in our research, we believe there is a need for a one-stop-shop for consumer information and support to meet these needs. Please see our response to question 8 for more detail.

A single communications strategy will only ever reach *most* but not *all* consumers. For particular demographic groups (including people in lower incomes, people with low literacy, people with limited proficiency in English, people living in First Nations communities and small business owners with non-home-based businesses) our evidence suggests that targeted strategies are required. NSW Government will need to work with the trusted sources / community groups for these groups to co-design materials and to disseminate them in order to reach consumers in these groups effectively.

[72] ECA, *Household Energy Consumer Information Research* (November 2023).

(b) What channels do you have available that could share NSW Government communications?

We have a full suite of digital and social media communications channels, including website and newsletter, LinkedIn, Twitter, Facebook, Instagram and Threads. We would be happy to share NSW Government communications that meet the communications needs of consumers we outline in our Household Energy Information Research (i.e. they are clearly understandable, ideally with one simple ask/action to take and speak to the benefits for consumers), noting that we are an independent national organisation.

11. What role could community batteries play in alleviating network hosting capacity and improving household access to storage?

Local storage and community batteries can help reduce capacity constraints in the local network. Certainly, community-scale batteries have the potential to combine the scale advantages of large storage projects with network and direct customer benefits that can only be achieved from distributed projects. However, community batteries are only one of a range of potential solutions that support greater hosting capacity.

In December 2021, the RACE for 2030 CRC published a paper focused on low voltage network visibility and optimising DER hosting capacity.[73] (The NSW Department of Planning, Infrastructure and Environment was among the report's primary funders). The paper identifies ten different types of interventions that are capable of addressing the capacity constraints in the local network that may limit the uptake of rooftop solar. Batteries are a feature of three of those ten solutions.

In other words, community batteries need to be understood as one of many tools capable of addressing local network constraints. It is a technology that offers many potential benefits, but limited and inaccessible network data, lack of fit-for-purpose tariffs, the very early stages of the local industry, and the inability to access additional revenue streams all contribute to less-than-optimal conditions for the community-scale storage market to grow and create all this potential added value to consumers.

(More detail on other ways to mitigate local network constraints is found in the answer to question 24).

(a) What are the key barriers to rolling out community batteries?

There are three key barriers to rolling out community batteries:

- Community-scale batteries – and Consumer Energy Resources (CER) more generally – are not rewarded for all the value they bring to the energy system.
- While many parts of the distribution network need storage, there isn't good public data about which specific locations would provide the most value.
- Community-scale storage is an emerging technology with a less established delivery chain. High costs for design and development can have a major impact on overall project economics.

(b) Which proponents are best placed to provide community batteries and why?

Private market participants, including but not limited to community groups and councils, are better placed than distribution network service providers (DNSPs) to provide community-scale batteries over the long-term.

Community-scale batteries have much to potentially recommend them: they offer economies of scale compared to household level batteries; located within the distribution system, they offer the potential to

[73] Race for 2030, *N2 Opportunity Assessment: Low voltage network visibility and optimising DER hosting capacity* (December 2021).

unlock more economic benefits or “value streams” than large-scale, transmission connected batteries; and by serving multiple different consumers, they benefit from a diversity of solar and demand profiles, enabling more “bang for the buck” for a given amount of storage capacity. They also face many challenges, the clearest current one being that community-scale batteries have rarely proven economically feasible, even with $500,000 subsidies from the government, for any project developer.

As a result, significant innovation is required to take community-scale batteries from a solution that makes theoretical sense on paper, to one that makes money for consumers in practice. Network businesses are 100+ year-old regulated monopolies; they may lack the motivation and DNA to innovate as aggressively as needed to build the business model and drive down the costs to make community-scale battery a long-term, beneficial consumer asset. Private industry and community groups are more likely to access creative approaches to solving the problem.

(c) Are the roles and responsibilities to supply community batteries clear? If not, how could they be improved?

The roles and responsibilities to supply community batteries are not clear. The biggest opportunity for improvement is to mandate that DNSPs publish data and maps identifying the areas of the network that would most benefit from community-scale storage. Non-network businesses face significant barriers to innovate in the sector unless all market players have equal access to insights about where batteries are most needed. Additionally, community-scale batteries and CER should be rewarded for the value they provide to the energy system. DNSPs must offer time-varying and location-specific network tariffs that can reward responsive consumer and distributed resources for the value they bring to the network. Ausgrid has already demonstrated an early version of this capability in Project Edith.

The term “community batteries” is itself problematic, especially when conferred upon batteries owned by the DNSP. Arguably all of a DNSP’s assets are “community” assets, because they all help the local community access electricity and for those with certain CER, export their energy. Nevertheless, we don’t call other network assets “community transformers” or “community substations”. Network-owned batteries should simply be referred to as network batteries. The term “community battery” should be reserved for batteries owned by local community members or where community members were the leading developers of the battery.

(d) What type of information do consumers need about community batteries to access them?

Consumers do not necessarily need “information” to access community batteries. Community batteries can provide discrete services for consumers – like providing a central storage facility for their solar energy – but that business model has not been proven anywhere, and not even demonstrated in Australia outside of Western Australia.

(e) What is the role for government in relation to community batteries?

The government has two important roles related to community-scale batteries. First, the government should help support community-batteries through something akin to industrial policy for an infant industry. With world-leading adoption of rooftop solar and significant and continued government funding, there is an opportunity for Australian firms to develop and operate community-scale batteries at lower costs and higher value. This requires effective allocation of funding that targets and tracks specific development objectives, such as the development of standard terms for efficient contracting and firms focused on different parts of the value chain (e.g. project development, control and/or project maintenance). Building a sustainable local industry will reduce battery costs to consumers in the long-term, while removing barriers to broader uptake and promoting competition in the sector. The government can help ensure that local firms build the technology, capability and business models to

serve the domestic market and then take those innovations to the global market when community batteries are required abroad.

Second, the government needs to improve energy regulation to ensure that batteries are rewarded for the value they provide, and non-network parties can identify the best locations for community-scale batteries. Both community-scale and household batteries provide multiple value streams to the energy system. However, these values are not always easily captured as a financial benefit. Legacy market designs primarily provide value and financial rewards to large-scale assets within the transmission system. For example, all battery types can provide generation capacity (sometimes called 'resource adequacy') to the system, but the initial design of the Capacity Investment Scheme only rewards large-scale, transmission connected storage. To realise the benefits of community-scale (and household) storage, the electricity market's design needs to evolve so that small-scale resources are rewarded for the services and benefits they provide. A new design of the capacity scheme that enables smaller resources to participate and more dynamic network tariffs would both help all distributed storage projects. The California ISO for example, allows market access to aggregations as small as 500 kW and individual resources as small as 100 kW. (FERC ORDER 2222).[74] A revised Capacity Investment Scheme should similarly provide access to resources of this size. Moreover, access should be provided to any resources that can provide capacity, such as aggregated flexible devices (e.g. water heater) in addition to "Virtual Power Plants",

The value of any community-scale battery project depends on its specific location. Areas with significant distribution network constraints, abundant solar generation, and expected increases in network expenditure are more likely to be valuable locations for community-scale storage. DNSPs have this information and third-party developers, who may otherwise be better able to innovate in their business model, do not. To overcome issues of asymmetric information, DNSPs should be required to regularly report on the best areas for community-scale storage, perhaps via the Distribution Annual Planning Review process.

(f) How can community battery value stacks be better unlocked?

Community-scale battery value stacks can be better unlocked via some of the recommendations made above. The electricity market's design needs to evolve so that small-scale resources are rewarded for the services and benefits they provide. A new design of the capacity scheme that enables smaller resources to participate and more dynamic network tariffs would both help all distributed storage projects, including community-scale batteries. To overcome issues of asymmetric information, DNSPs should be required to regularly report on the best areas for community-scale storage, perhaps via the Distribution Annual Planning Review process.

12. What are the main issues or barriers with household access to consumer energy resources?

Please see our response to question 4 – which considered the barriers to household uptake of, and access to, CER collectively. We took this approach as ultimately household access to the benefits of CER is a more important objective, as for some households it simply won't be feasible to acquire certain CER. For example for a household living in a multi-unit dwelling, while owning individual solar PV or batteries are likely out of reach, they can be supported to access solar gardens or community-scale batteries.

13. How can the NSW Government best improve access to consumer energy resources for:
    - Private renters
    - Social housing residents

[74] California ISO, *Aggregated DER participation in ISO/RTO markets enabled by FERC Order 2222* (February 2021).

- Low-income households
- Apartment residents
- Embedded network residents
- Regional and rural households
- Any other vulnerable groups?

Our response to question 4 outlined the potential barriers to uptake of CER for all NSW households – they include significant upfront costs, housing tenure and type, lack of clear direction and information, and a consumer's circumstances (where they live, whether English is their first language, digital and numeral literacy etc).

Those barriers are particularly high for some households, and those people will need assistance from government to overcome them. We welcome the NSW Government's commitment to equitable access and ensuring that all NSW households can benefit from the energy transition.

We recommend that an important first step would be identifying the fundamental principles and objectives for incentives schemes to ensure they address substantive barriers, in lines with people's expectations of effective and fair management. They should include:

- Inclusive - helping those who face barriers to action
- Designed to help the diverse range of consumers
- Build consumer trust and confidence
- Actively consider how to make consumer decisions easier.

Our research has consistently demonstrated that there is no silver bullet or one size fits all solution; depending on their circumstances, effective solutions to address those barriers will differ. Policies and programs should be designed to consider consumers' diversity to understand which forms of assistance will be most effective for different types of consumers.

We would agree that groups listed in the consultation paper do face high and different barriers to accessing CER.

The following outlines the policy approaches that are likely to be effective, acknowledging that the NSW Government is already actively pursuing some of these.

Private renters

Under current State legislation, renters' ability to uptake CER is severely limited, and actively locks tenants out of many CER solutions that would help them manage high energy bills. Landlords have proved slow to initiate energy efficiency upgrades and/or install CER in those homes as they either don't see the direct benefit, and can be unaware of the detriment that's caused by poor energy performance.

Addressing these issues requires a number of actions:

- Government to undertake necessary reform of tenancy law and regulations, to make it easier for tenants to initiate and action change.
    - The critical first step will be to oblige all rental properties to meet a minimum standard of energy efficiency.
- Developing effective incentives to encourage landlords to take action: a mix of carrot/sticks will most likely be the most effective. The strategy should lay out clear timelines and pathways for landlords.
    - Ban the rental of properties below the minimum standards from 2027;

        - the UK trialled just that approach, which has been successful in improving rental properties [75]
    - Developing incentives for landlords to improve energy efficiency. For mum and dad landlords, the UK provided grants and low-interest loans to support landlords to retrofit their homes;
        - At a time of housing shortage when there is increasing pressure on rents, any incentives must minimise any pass through to tenants. Our *Energy Efficient Housing* research indicated that 49% of landlords would increase rents, even if they'd received financial incentives. We recommend that the government work with other jurisdictions to consider the design of mechanisms that preclude using improved energy performance to increase rents. We acknowledge that this is not an easy task, but see it as an important and missing piece of the policy toolkit to drive change.

Social housing tenants

People in social housing can be doubly disadvantaged – they have limited (if any) control over the maintenance and upgrades of their homes, and are unlikely to have the capital to invest in CER.

Government must therefore be the driver of action – we recommend that the NSW Government should:

- Set clear targets for energy efficiency upgrades of all social and community housing, that prioritises the upgrade most likely to deliver lower bills and better amenity to residents.
- Commit to upgrades as a priority
    - There are critical secondary benefits to that action, as ACOSS and others have noted, where investing in social housing has the corollary benefit of improving workforce skills and capabilities.

Low income households

Low income households can face multiple stressors – the Brotherhood of St Laurence's recent research outlined the barriers for electrification for low-income households that are comparable to CER uptake. They are more likely to be living in homes that are not climate ready or resilient, and to be suffering from extreme weather.

Two major barriers that the NSW Government has the levers to address are:

- Providing low income households with the right information: to overcome perceptions that CER is expensive or difficult, and put people in touch with assistance
- Addressing capital barriers – grants, low or no interest loans or tax relief should all be considered to encourage uptake.

Apartment residents

The NSW Government should continue to work with other jurisdictions to develop robust and accurate energy performance rating tools for apartments. That gap in knowledge is a major barrier.

We recommend that the Strategy include a commitment to review State and council legislation and regulation that are presenting barriers to improved energy performance.

Embedded network residents

[75] GOV UK, *Domestic private rented property: minimum energy efficiency standard - landlord guidance* (April 2023).

Major reform is required to provide residents living in embedded networks with the ability to proactively manage their energy consumer and energy bills.

We encourage NSW government to work closely with the Australian Energy Regulator (AER) and the Independent Pricing and Regulatory Tribunal (IPART) to develop solutions to the multiple issues faced by embedded network residents, as well as to consider how to remove the incentives for property developers to enter into such arrangements with no thought for the people who will be paying the bill. Our submission to AER on this issue provides further recommendations, including that consumers supplied via embedded networks must receive protections equivalent to on-market customers.[76] Further, please see our response to question 18 for our views on IPART's consultation.

14. What are the best ways to improve access to consumer energy resources for low-income households?
    (a) What is the role of the NSW Government in driving uptake for these households?
    (b) How can the private sector, including the finance sector and community organisations, contribute to improving access?

As noted above, the NSW Government should focus on addressing two of the key barriers for low-income households – providing them with the financial support and know-how to take action.

In considering the ecosystem to encourage action, there are other important entities that should be considered within NSW's strategy:

- It has not been easy to identify ways to reach low-income households through the finance sector, given that income is a main barrier to action. Banks can and do play a role in advising households of opportunities – e.g. if a pensioner seeks a loan to replace a major appliance, that the bank encourages them to seek the more energy efficient device. The work being done through the banks on green loans could usefully be leveraged to provide advice to other consumers. Noting these are low-income households, it would be important to ensure that any financial arrangements do not place further stress on the household.
- The community sector will continue to be an important part of solutions to help low-income households; it acts as a conduit to alert and recruit people to government programs, as a source of feedback on whether those programs are effective in delivering the intended outcomes, and as a source of advice on how to design program for people who need additional assistance. Those activities should be appropriately recognised within the Strategy and, as necessary, resourced.

15. What is required to ensure that social housing providers can use consumer energy resources to reduce energy bills and make their housing more liveable for their tenants?
    (a) What sources of additional investment or innovation could help increase the number of home upgrades across NSW?

As noted above, we see a clear role and responsibility for the NSW Government as the landlord for social housing, and the funder and supporter of community housing. Improving the energy efficiency of those homes should be a priority, and that solution will include CER, for individual properties and for buildings where there are common and shared areas.

A key principle underpinning programs and policies to improve social housing should be that social housing tenants benefit from the installation of CER – that is, that where CER might be defraying costs

[76] ECA, *Review of the Exemptions Framework for Embedded Networks* (February 2024).

of common areas in a building, that the reduction in costs benefits the tenants, either through lower bills or lower rents.

16. What are your views on implementing minimum energy efficiency rental standards to activate uptake of consumer energy resources across the rental sector?
    (a) What should the Government consider as part of the investigation?
    (b) What, if any, transitional measures would be needed such as lead times, temporary financial incentives, information tools to assist landlords etc.?
    (c) Would you like to be consulted further as part of the investigation?

ECA strongly supports the introduction of minimum energy efficiency standards for rental properties, and recommends the NSW Government introduce standards as an urgent priority. As such, we would like to continue to be consulted in the development of rental standards.

The harm caused to tenants by inefficient properties is significant – not just in disproportionately high bills, but to their health and wellbeing. The market is not delivering effective solutions, particularly at a time when there is a shortage of rental properties.

Our research demonstrated high support for introducing minimum standards – 70% of respondents overall supported the change.[77]

But it also revealed a high level of concern that the cost of upgrades would be passed through to tenants, worsening what is already a sector in acute stress. Over half of tenants said they would be wary of asking landlords for upgrades for fear of raising rent, and 52% agreed that landlords were not investing in the energy efficiency of their home.

We asked landlords what they thought – 63% told us that it was important to create a healthy, safe and comfortable home for their tenants, and 55% agreed an energy efficient property would be easier to rent. They identified the key barriers to change as affordability and inertia.

Renters are currently particularly disadvantaged – the split incentive means landlords don't see value in improving energy performance, landlords generally overestimate the performance of their properties and the use of third parties (real estate agents) to manage that relationship creates further distance between intention and outcome.

The Consultation paper sought input on what should be included in consideration of a minimum energy efficiency standard for rental homes. We recommend that the investigation include the following:

- While CER should be included, we recommend that any standard should consider the whole-of-home – putting a solar panel on a leaky or mouldy home, or replacing energy efficient gas appliances with inefficient electric heating or cooling does not improve outcomes for tenants.
- Programs to incentivise and assist landlords to make change need to be carefully considered. Our research showed that landlords supported incentives to action, but just under half (49%) of landlords said they would raise the rent even if they got government support. That approach wasn't supported by other survey respondents, who agreed there should be a mechanism to stop landlords passing on the costs to tenants. Most respondents thought some form of government incentives (e.g. tax breaks or no or low interest loans) were appropriate.
- Incentivising and/or enabling real estate agents and property managers to be more effective in their advice to landlords. Landlords rely on them for advice on their regulatory obligations and

[77] ECA and RENEW, *Energy Efficient Housing Research* (August 2022).

how to improve the value of those homes, but the interests of the tenants are too often overlooked.

17. How can the government help improve access to consumer energy resources for apartment residents?
    (a) Should the government focus on common areas and facilities, or on access for individual residents, or both?

Multi-unit dwellings pose particular challenges, not least because some of the issues and barriers consumers are experiencing are caused by inconsistent policy and regulation at the State and council level.

We are seeing a number of issues emerging for residents, such as strata law obstructing the uptake of solar panels or EV chargers, or embedded network arrangements locking residents into multi-year contracts.

We support working with the states and territories for full implementation of the National Construction Code 2022 requirement that new apartment buildings are EV ready and developing further measures to support easy and safe charging of EVs.

We recommend that the Strategy include a commitment to review State and council legislation and regulation that are presenting barriers to improved energy performance. One way to collect this information includes providing consumers with assistance and advice when they encounter such a barrier and being able to capture and report to government on the problem. Alternatively, it could leverage networks such as the Australian Local Government Association to share information where planning regulations encourage perverse outcomes.

18. What are your views on IPART's draft recommendations?

We were pleased to see the Default Market Offer (DMO) deemed an inappropriate price mechanism for electricity embedded networks and in principle we supported the proposed methodology outlined in IPART's Draft Report with one recommendation for adjustment.[78] It is our view that the proposed pricing methodology should be the average of the three lowest retail offers being advertised on the AER Energy Made Easy website.

The methodology for setting the DMO explicitly states that it includes headroom to promote competition in the electricity retail market and incentivise consumers to engage with the market, which does not apply to embedded networks as there is no retail competition and customers have limited opportunity to switch offers. It is for this reason the DMO is an inappropriate price mechanism for embedded networks.

The pricing methodology should be based on the average of the three lowest retail offers due to the increased vulnerability of embedded network customers and their reduced capability to access cheaper offers through engaging with the market. For example, the AER in their *Towards Energy Equity Strategy* highlighted that embedded network customers are not covered by the same protections under the National Energy Retail Rules.[79] They also cannot access the NSW Energy Accounts Payment Assistance scheme, which doesn't extend to customers of embedded networks.

[78] ECA, *The Future of Embedded Networks in NSW* (February 2024).
[79] AER, *Towards Energy Equity Strategy* (October 2022).

Finally, as mentioned above, the advice to "switch to save" is not feasible for most households in embedded networks, as they don't have the same access to the competitive retail market.[80]

Further, while we support (in principle) the proposed methodology for setting the maximum prices for consumers in embedded networks, we see IPART's review as a first step in addressing the various challenges of embedded networks from a consumer outcomes perspective. While outside the scope of the consultation, there remains a broader conversation, not just about cost, but about agency.

Consumers who live and work within embedded networks are giving up their agency and control over their energy supply and are completely in the hands of the embedded network operator's intentions or interests, often unaware that they have entered into these types of supply arrangements until it is too late. We consider it is timely to review the level of protections consumers in embedded networks receive with clear justifications to any exclusions under the NECF based on a robust cost benefit analysis. This will help to ensure consumers are protected by a regulatory regime which is comparable, wherever possible and practical, to the one enjoyed by on-market consumers.

19. Should retailers be required to inform customers of a better offer by other mechanisms than the bill?
    (a) If so, when and by what means?

While there are better offers available, we know that many consumers rarely investigate switching plans and many don't know details about their current plans. Our latest ECSS found that nearly half of NSW households say they investigate changing retail plans less than every 2 years.[81] Of those NSW households who told us they did consider switching, only 17% did so because their retailer told them about a better offer or offered a discount.

Our recent research on consumer information needs found people aren't sure what they should do and aren't finding independent, relevant information they feel they can trust. Nationally, 3/5 of households have no recollection of seeing or hearing anything about managing their energy use and bills in the last year. If they do find information, it is so confusing they disengage and switch off.

Clearly the current approach isn't working well for consumers. We are aware of the recent changes to the energy messaging on bills as a result of the AER's Better Billing Guideline. This may go some way to improving the effectiveness of the bill as a channel for informing customers that better offers are available and we look forward to a future assessment of the effectiveness of these measures. However, we consider the NSW Government should consider a variety of methods to reach the diverse range of households. Energy consumers are diverse and this type of information and delivery should account for this. For example some will not be digitally savvy, while there are others for whom English is not their first language.

However, in our view, switching alone is not an effective measure of a successful market for consumers. Switching does not guarantee better consumer outcomes – retail market complexity, behavioural tendencies and the required mental load mean that consumers may not have the agency they need to achieve their best outcome.

We support the recent announcements from the Energy and Climate Change Ministerial Council on the National Consumer Energy Resources Roadmap and the development of a consumer-focused reform package which we will continue consideration of both the AER's Gamechanger initiatives and Consumer protections recommendations.[82] We think there are measures which could be taken

[80] DCCEEW, *Switch to Save* (accessed March 2024).
[81] ECA, *Energy Consumer Sentiment Survey* (December, 2023).
[82] ECMC Communique 1 March 2024.docx (live.com)

nationally to help ensure consumers are on the best offer, such as the AER's proposal to automatically place consumers on hardship programs on a better offer.

20. What should the NSW Government do to better coordinate consumer energy resources with grid supply?

Better coordination of CER with grid supply will have significant benefits for all consumers, those with and without CER. To improve coordination between CER and grid supply, the NSW Government should consider providing a range of solutions – requirements and incentives for both retailers and networks.

Networks should be required to:

- Issue an annual integrated distribution system plan (described in more detail in question 24). Such planning can help ensure that networks are using the best engineering techniques and effectively incorporating consumer feedback in designing advanced tariffs and sharing information about network needs. We note that in Oregon, these plans must prioritise energy efficiency as the least-cost, least-risk resource.[83]
- Provide, on an opt-in basis, tariffs that vary by time and location, akin to what Ausgrid has piloted in developing Project Edith.
- Provide a "best locations for non-network solutions" appendix in their Distribution Annual Planning Review (described in more detail in question 11), which would help community battery and other CER developers to understand which areas are most ripe for CER to support the network.
- Report annually on their use of the Demand Management Innovation Allowance and the Demand Management Incentive Scheme, including identifying any issues which lead to low use of these programs.

Retailers should be required to:

- Include a retail pricing plan that includes dynamic prices for consumers with the technology who can respond to such dynamic prices.
- Report annually on their demand response and other CER offerings, and the consumer protections they provide related to these, to understand how these offerings are progressing and any issues they experience in consumer adoption. In this way, introducing common guidelines could prove valuable.

Incentives for retailers should include:

- Expansion of the Peak Demand Reduction Scheme (PDRS), particularly to include electric car charging. Our *Stepping Up* report found that dynamic car charging could save those consumers without electric vehicles hundreds of dollars per year through downward pressure on prices due to savings in network costs.[84] Further, we know that some consumers will be flexible in when they charge if provided an incentive, with research by the University of Queensland finding that doing so reduced load by as much as 26% during peak periods, and increased it when energy was abundant by up to 25%.[85]

The NSW government may be more inclined to focus on the role of retailers, given their direct relationship with the consumer. However, coordination of CER requires the entire energy system working together, therefore working directly with networks is also vital. For example, we recommend

[83] Energy Trust of Oregon, *Clean, Affordable Energy for Everyone* (February 2023).
[84] ECA, *Stepping Up: A smoother pathway to decarbonising homes* (August, 2023).
[85] The University of Queensland, *The UQ CHARGE-EV Project: Final Report* (February 2024).

requiring retailers to include a retail plan with dynamic rates or prices, and that networks must also offer, on an opt-in basis, tariffs that vary by time and location. Dynamic retail prices are only effective at helping address network issues if they also incorporate dynamic network pricing. Accordingly, both requirements are needed.

21. What are the priorities for coordinating demand with supply? Some examples could include:
    - Expansion of the PDRS, for example to include EV chargers
    - Requiring retailers to offer tariffs or incentives to households to encourage demand response, battery discharge etc
    - Requiring retailers to offer more controlled load services e.g., for air-conditioning or other voluntary load shedding
    - Introducing common guidelines for existing retailer-led peak demand reduction programs to increase visibility and consumer protections
    - Strengthening incentives for distribution networks to increase uptake of the DMIS.

Please see response for question 20.

22. What household demand response programs are already occurring?
    (a) How effective are they?
    (b) Would retailers or DNSPs be comfortable sharing data confidentially on their programs, including their uptake, capacity and effectiveness?
    (c) What are the barriers to increasing demand response from households?
    (d) How can these be overcome?

Our latest *Energy Consumer Behaviour Survey* asked households if they were willing to use smart appliances to control their bills.[86] Most people agreed, with 42% saying they would. However, most respondents also wanted to maintain control – wanting to either set the smart appliance controls themselves (41%) or have override capability (53%).

This sense of control was also heard in recent qualitative research we undertook, where participants told us they were concerned about security. Many have discomfort with third-party control, driven by recent high-profile data breaches. Policy proposals involving networked devices, third-party control or data-sharing need serious regulatory guardrails and consumers need to maintain autonomy over their use.

We also asked households what stops them from changing the time of day when they use certain household appliances.[87] For NSW residents, the top three barriers are:

1. I need to do these tasks when it's convenient for me (46% of households)
2. Not at home at those times (e.g. at work, study) (35%)
3. It's hard to plan when I need to use these appliances (28%)

NSW residents felt that the hardest appliances to change the time of demand for were those relating to heating and cooling. Only a third felt they could change the time when they use their air conditioner for heating (37%) or cooling (33%). In contrast, just under two thirds of households felt those appliances relating to washing (dishwasher, washing machine and clothes dryer) and the time they charge their devices were easy to change.

Clearly not all sources of demand response are as responsive as others. A report by KPMG commissioned by ECA, *Supporting demand flexibility in the energy sector transition,* found that while

[86] ECA, *Energy Consumer Behaviour Survey* (October 2023).
[87] ECA, *Energy Consumer Behaviour Survey* (October 2023).

there is substantial potential for demand flexibility from heating and cooling, water heating, swimming pool pumps, lighting, and appliances, demand flexibility is secondary to the functional purpose for consumers.[88] For example, poor insulation, coupled with the fact that the hot periods of the day don't always coincide with times of peak supply, means households may be limited in their ability to switch off their air conditioning and maintain comfortable living spaces. KPMG noted that batteries (including community batteries, household batteries and electric vehicles) will be a "gamechanger" for future flexibility.

KPMG identified six key enablers which should be built into governance arrangements to enable demand flexibility:

1. Integration into system planning – Market bodies should be required to consider energy performance as the first fuel and prioritise demand side opportunities wherever appropriate
2. Technology capability – there should be support for platforms that support consumer response, such as the rollout of smart meters, and the introduction of flexible trading arrangements.
3. Information flows – Ensuring platforms and policies for consumers and regulators can easily capture and safely share relevant data, as well as interoperability standards that enable devices and appliances to easily engage in demand response programs and services.
4. Adequate compensation – Programs and policies that recognise and reward consumer assets and behaviour, rather than penalise people when they do not have the capacity or motivation to shift demand.
5. Clarity on responsibilities – Consumers need agency, clear protections and rights across all energy suppliers and access to effective external dispute resolution.

Additionally, the Monash University's *Digital Energy Futures* project, which included research on demand management opportunities found trust is critical to engaging households in demand response.[89] Aligning demand management approaches with household concerns will help to build trust. Specifically, the report noted that there are six foundations of demand which would underpin demand initiatives and sector communications and build household trust:

1. Household-facing energy language and research
2. Awareness of peak demand and surplus solar electricity as system challenges
3. Rewards instead of penalties
4. Recognition of community, system and sustainability impacts
5. Access to tailored energy feedback and practice insights
6. Partnering with households and organisations

The report also talks through tailored approaches that could be used for a variety of needs and suggests opportunities for demand response approaches.

23. How should demand response initiatives be designed to ensure they benefit customers?
    - For example, what consumer protections, level of incentives or communications are needed?

We support a fulsome review of consumer protections to ensure they are fit for purpose, both in the context of CER generally and specifically in respect of demand response initiatives. Further thought is required to consider which elements of the existing frameworks need to change and how, particularly in the context of demand response services. However, our initial view is that existing arrangements are not fit-for-purpose and will increasingly become out of date as the system transitions.

[88] KPMG, Supporting demand flexibility in the energy sector transition (February 2023).
[89] Monash University, *Digital Energy Futures: Demand Management Opportunities* (December 2021).

Currently, the AER takes a relatively narrow view on the types of services it is able to regulate. For example, while the AER has a clear role in regulating gas services, it considers this role does not extend to regulating hot water services in embedded networks, even where customers are billed by a gas retailer, because the service being provided is hot water, not energy. Similarly, the AER may consider its jurisdiction does not extend to certain services that could be offered in the future that ultimately are designed to deliver demand response, such as services that provide thermal comfort by ensuring a consistent home temperature. Consumers need a clear set of rights and clear accountability for these types of services. Currently, there is a risk they will fall through a gap.

The NSW Energy and Water Ombudsman also play an important role in helping consumers resolve complaints. As noted elsewhere in the cover letter however, not all CER providers are currently required to be a member of the ombudsman scheme. This can result in frustrating journeys for customers seeking to resolve complaints. Similarly, access to free and independent dispute resolution is critical for demand response services. While in some cases these may be offered by an energy retailer and so be captured by the ombudsman scheme, in others they may be offered by a technology provider. For example, installers of hot water systems or EV chargers may not be captured.

With respect to incentives and communications, the Energy Security Board produced both a knowledge sharing report,[90] and rapid evidence review on unlocking the value of flexible CER.[91] It notes that to ensure success, it will be critical to:

- Improve access to value streams (e.g., 'value stacking')
- Offer more compelling incentives which go to a range of range of financial and non-financial values motivating consumers
- Provide transparency around how the benefits are shared.

Certainly, incentives are most effective when complemented by information, tools, and support to help consumers respond to price signals.

24. What are the best ways to support the use of solar and other consumer energy resources while upholding the technical and operational needs of the grid?

As noted in the response to question 11, in September 2021, the RACE for 2030 CRC published a paper focused on low voltage network visibility and optimising DER hosting capacity.[92] (The NSW Department of Planning, Infrastructure and Environment was among the report's primary funders.) Among other objectives, that paper tried to identify the options that increased the ability of solar and other CER to export to the network at the lowest cost. The paper recommends a combination of efforts, and notes that "the best combination of network and non-network options varies. Different [CER integration techniques] worked better on some feeder types than others, and some worked well for low PV penetrations but not for high."

The best ways for the NSW government to support the use of solar and other CER while upholding the technical and operational needs of the grid are to require DNSPs to regularly plan their approaches to support solar and other CER in connection with local communities. A large number of American states now require 'Integrated Distribution System Plans,'[93] which are akin to AEMO's Integrated System Plan (ISP) focused on the local distribution network. The most effective versions of these include large

[90] ESB, *DER Implementation Plan Customer Insights Collaboration Release 1* (June 2022).
[91] ESB and Acil Allen, *Barriers and enablers for rewarding consumers for access to flexible DER and energy use* (June 2022).
[92] Race for 2030, *N2 Opportunity Assessment: Low voltage network visibility and optimising DER hosting capacity* (December 2021).
[93] US Department of Energy, *Integrated Distribution System Planning* (accessed March, 2024).

amounts of consumer outreach to understand the specific interests and desires of local communities, and require DNSPs to outline a number of options for supporting CER and justify their recommendations for moving forward with certain approaches. The Centre for New Energy Technologies (C4NET) is conducting a Victoria-wide *Enhanced System Planning Project* focused on identifying ways to better plan the distribution system,[94] and we hosted a webinar focused on best practices in this area in late 2023.[95]

The ISP Review appears likely to require AEMO and DNSPs to work more closely together to identify how CER can best support the overall energy system. That process would be more effective if DNSPs had requirements to do more thorough local planning, like the 'Integrated Distribution System Plans' found overseas.

25. Is implementation of the AEMC recommendations the best way to communicate with consumer energy resources in NSW?
    (a) If not, what would you change?

We generally supported the outcomes of the Australian Energy Market Commission's (AEMC) metering review, including the advanced roll-out of smart meters.

One area we consider would benefit from reform is consumers' ability to easily access their energy data in real time and for free.[96] This was also a recommendation made by the AEMC in its metering review.[97]

As Australia's energy system transitions to more renewable fuel sources, such as wind and solar, there will be frequent periods of energy abundance (for example in the middle of the day) and scarcity (evenings and winter). Giving consumers the tools and services they need to harness these periods of abundance and limit their energy consumption during periods of scarcity will help consumers keep their energy bills down and lower overall system costs. One of these tools is access to their own data in real time from smart meters.

Access to insights provided by real time data on energy consumption and generation can help consumers understand and adapt their own behaviour if they have the ability. Making smart mater data available, locally from the meter, will also help support a competitive future service industry producing tools and products that help assist consumers in optimising their energy resources or usage.

Consumers do have a right to access metering data currently, however, this data can only be accessed via a customer's retailer and is not real time, limiting its usefulness.

26. What common data framework should NSW use?
    (a) Who should be required to comply with a common data framework and how?

Ensuring effective interoperability is an essential part of the transition towards a decentralised low emissions, renewable energy system. Integration of CER and its orchestration into the energy system must be done with a focus on consumer outcomes and ensuring social licence. Inverter interoperability, enabled by CSIP-AUS and IEEE 2030.5-2018 is critical in providing functions that support the energy system while also ensuring consumers can realise the benefits from their CER

[94] C4NET, *Enhanced System Planning Project* (accessed March 2024).
[95] ECA, *21st Century Energy System Planning - Webinar 3: Integrating transmission and distribution planning* (October 2023).
[96] ECA, *Submission to the Australian Energy Market Commission's Draft Report on the Review of the Regulatory Framework for Metering Services* (February 2023).
[97] AEMC, Review of the regulatory framework for metering services, Final Report, 30 August 2023.

investments (as noted by the Distributed Energy Resources Integration API Technical Working Group).[98]

It is our understanding, that CSIP-AUS is a more robust protocol, and that effectively if you are complying with CSIP-AUS you are compliant with core parts of IEEE 2030.50-2028. Based on this, we recommend the NSW Government use CSIP-AUS within their data framework. The use and compliance of these protocols should be accompanied by an assessment framework to ensure good consumer outcomes are being met. See our submission to the ESB Interoperability Policy consultation for further background.[99]

We note that in Victoria from the 1st of March, it is a mandatory requirement for Solar PV inverters listed on Clean Energy Council's Approved Inverter list to conform to IEEE 2030.5-2018 and CSIP (AUS).[100] We recommend that the NSW Government consult with other jurisdictions to learn from their implementation processes, to best ensure an effective and appropriate response that ensures good consumer outcomes and industry willingness.

27. Can communication with households just before an energy emergency be improved?
    (a) If so, how? What role can the NSW Government play in improving information to households to encourage behavioural change?

Our survey results tell us that most NSW residents are willing to reduce their energy use as much as possible during a very hot period.[101] Half of the respondents (49%) told us they would reduce their usage as much as possible, without any financial incentives. A further 30% said they would respond with a financial incentive. We saw similar results for those who were willing to reduce their usage a little. However, we also know that consumers expect reciprocity – that industry and government also play their part. In recent qualitative research we undertook, consumers told us they expect that the burden of reducing consumption is spread across everyone.

When making such a request of households, governments should be careful in their messaging. We know that certain groups, such as older and infirm consumers, should not respond to such requests and instead should prioritise their health and wellbeing. However, our *Power Shift* research identified that mature age consumers, who were on the pension and come from an era of frugality, are very sensitive to messages about saving energy and more price-sensitive than other cohorts.[102] The research recommended that they are more likely to ration energy to an unsafe level. We recommend that that the NSW Government carefully consider the frequency of such requests and the messaging to ensure that the right people continue to respond during emergencies.

In the longer term, we consider this could be a potential function of a comprehensive one-stop-shop (see the figure under question 8 above for the potential uses of a one-stop-shop).

28. How can the NSW Government build consumer confidence in consumer energy resources products and services?

There are five ways the NSW Government can build confidence in CER products and services.

1. Clear communication on the need for CER

[98] DER Integration API Technical Working Group, *Common Smart Inverter Profile – Australia* (January 2023).
[99] ECA, S*ubmission On The Energy Security Board's Interoperability Policy* (March 2022).
[100] SolarQuotes, *Dynamic Solar Exports Are Mandatory In Victoria From Today* (Accessed March 2024).
[101] ECA, *Energy Consumer Behaviour Survey* (October 2023).
[102] ECA, *Power Shift Final Report* (February 2020) p 27.

Echoing what we have already said throughout this submission, we emphasise that governments have an important role in explaining to consumers why they are being asked to change the way they use energy, and providing a clear and coordinated plan – which includes both financial and structural support, to enable them to access to the benefits of CER.

With respect to electrification, an example of this in practice is the ACT Government's Integrated Energy Plan.[103] It has announced that consumers will not be able to use reticulated gas after 2045, and that consumers should consider this when upgrading or replacing appliances, and that doing so will save money and reduce emissions. Our research finds that ACT households are more likely to be thinking about and transitioning off gas than other jurisdictions in Australia, which suggests the benefit of this.[104]

2. Access to trusted advice and support on CER via a one-stop-shop

Consumers will have more confidence investing in CER and engaging in related services if they are confident that they have the right information, tools and advice to support their decisions. As noted previously in this submission, energy markets are highly complex. Even one decision, such as investing in a battery, requires considering a series of complicated and highly technical questions.

Simply expanding consumer awareness and information is unlikely to be sufficient. To be confident that they are making decisions about CER that are in their best interests, consumers need access to trusted advice to support them through the decision-making process and ensure that all facets of a consumer's energy journey are considered. For example, while supporting consumers to install solar panels will help them reduce their energy bills, a comprehensive service should also work with them to identify whether they would be better of changing the energy retail plan and how they might modify their energy use to make the most out of their investment.

We consider this is best achieved via a one-stop-shop that would be a trusted voice to help consumers make the range of decisions they need to make to help reduce their bills and decarbonise their homes. Please see our response to question 8 for more details.

3. Implementing necessary technical standards and guidelines

As the consultation paper notes, a key enabler to preventing poor consumer outcomes is through the implementation of standards and guidelines for products, product installation and operation as well as associated services. We support clear, accessible standards and guidelines that ensure both the safety and the performance of products and services (see also our response to question 29). This would include installer accreditation processes. Ensuring compliance and enforcement of any obligation will also be critical for better outcomes.

4. Ensuring customers have access to effective protections

Effective consumer protections are also essential for consumer confidence. We agree with the AER's recent finding that the current regulatory framework for consumer protections is not fit-for-purpose as the energy system transition and would welcome change to the current protections framework.[105]

Energy regulation was built based on a one-way seller/buyer relationship, with power resting with the seller and rules to mitigate harms to the buyer. This relationship is changing as consumers choose to engage with CER now and into the future, making them more active participants, The energy system itself also seeks consumer buy in and trust to utilise this CER for the benefit of the grid, and for

[103] ACT Government, Make Your Next Choice Electric (accessed March 2024).
[104] ECA, *Homeowners are increasingly considering swapping gas appliances with electric ones* (January 2024).
[105] AER, *Review of consumer protections for future energy services – final advice report* (November 2023).

consumers to shift their behaviour to circumvent load on the grid. Therefore, we need a protections framework that enables consumer agency, protects from harms across the entire energy consumer journey.

Two elements of effective consumer protections are consumer agency – supported by access to trusted advice and support, as discussed above – and access to free and independent dispute resolution, as discussed below.

In addition, regulatory frameworks need to keep pace with the way in which energy will be bought rather than how it has traditionally been sold. This means replacing the current narrow approach to consumer protections, which focuses on consumers simply buying energy from their retailer, with robust and comprehensive framework for the protections and rights for consumers of both traditional and new energy services, including CER and the services they enable.

5. Providing access to free and independent dispute resolution

Finally, as highlighted in our cover letter and elsewhere in this submission, this includes our recommendation that the jurisdiction of the NSW Energy and Water Ombudsman be expanded to include all energy services. If people have to seek alternative, complex and often costly forms of redress, this will only lead to yet more disengagement in the market, and further poor outcomes for consumers.[106]

29. What are the key challenges with modernizing standards for consumer energy resources?

We have previously commented on these issues in our joint submission to the Energy Security Board Interoperability Policy Directions Paper and the Australia Energy Market Commission's Review into Consumer Energy Resources Technical Standards Consultation Paper.[107]

Consumer outcomes and benefits must be the foundation of the design, implementation, and ongoing enforcement of CER technical standards. These standards influence and act on the functioning of CER which are by definition consumer owned and invested assets. They will also typically increase the direct costs of CER investments. We would define good consumer outcomes as the following:

- Enabling choice and flexibility when purchasing CER, with the confidence consumers will be able to use the technology how they want to.
- Enabling equity of outcomes in the use and operation of CER and support inclusivity.
- Increasing the affordability and value proposition of CER for consumers over time.
- Should non-compliance occur the consumer should not be penalised if they are unaware of non-compliance or the cause for such non-compliance.
- A single point of contact to resolve any problems of interoperability or compliance.

In a rapidly changing environment such as the current energy market, a standard setting process should provide assurance, confidence, and transparency to consumers and market participants. Timeframes for amending standards can be long. Flexibility is a key strength given the speed of technological advancement and broader changes in the energy market. We are concerned that current processes are too slow to respond in a timely manner.

[106] University of Sydney, *What will energy consumers expect of an energy and water ombudsman scheme in 2020, 2025, and 2030? (*October 2019).
[107] ECA, *Submission to the Energy Security Board Interoperability Policy Directions Paper and the Australia Energy Market Commission's Review into Consumer Energy Resources Technical Standards Consultation Paper* (November 2022).

Our preference is that standards are consistent across jurisdictions. We appreciate there may be minor, localized requirements, however it is hard to see how there could be any basis for differences in technical standards, within Australia. If a standard is already in place for "front of the meter" generation and storage assets, or for demand response from large scale customers, it should be considered for residential or small business consumers with "behind the meter" assets. Where there are differences, there should be a clear rationale.

Lastly, compliance and enforcement of standards requires effective policing, consequences and remediations. However, we recommend that the consumer should not be penalised or bear the consequences for non-complying devices if they are unaware of such non-compliance. More often than not, the consumer trusts the manufacturer to create a safe product that adheres to all the relevant standards, and that the installer sets up their devices in correct operational capacity to relevant standards. It would be unreasonable to suggest that consumers are or should be aware of the state compliance of technical standards of their device or are or should be able to rectify this themselves.

30. Which consumer energy resources need new, updated or strengthened standards? Why?
    (a) Which standards would benefit from harmonisation at the national or international level?
    (b) What role do you see for the NSW Government in improving standards for consumer energy resources versus the Commonwealth Government?

In addition to our response to question 29, we also note the following:

- Our view is that all current and future technical standards need to be developed and enforced within an overarching policy framework that can connect consumer outcomes, market and system design and objectives, and the standards setting process.[108] This policy framework should be applied by a separate governance body, such as a new national consumer energy resource technical regulator. This approach would guide all future technical standards that are developed, mandated, implemented and enforced.
- With respect to AS4777.2.2020 we are concerned about low levels of compliance.[109] From a consumer's perspective, the impact of this non-compliance is the risk of more frequent disconnections, zero export limitations, and not being able to get the most value from their investment.
- With respect to minimum standards for electric vehicle smart charging, we recommend:[110]
    - nationally consistent communication capability requirements, namely that of OCPP 1.6J.
    - minimum functionality for domestic chargers to be installed with build-in scheduling and remote management (and consumer over-ride capabilities), provided that these activities are opt-in for consumers and that the cost impacts are not prohibitive.

31. What types of capacity building and training would benefit the industry to improve safety, quality, performance and recycling of consumer energy resources?
    (a) Who is best to deliver this?

No response.

32. What other measures can be used to support compliance with standards in NSW?

[108] ECA, Submission To The AEMC's Draft Report: Review Into Consumer Energy Resources Technical Standards (June 2023).
[109] ECA, *Submission To The AEMC's Draft Report: Review Into Consumer Energy Resources Technical Standards* (June 2023).
[110] ECA, *Electric Vehicle Smart Charging Issues Paper – for Consultation* (September 2022).

As noted above under question 29, we consider compliance with technical standards is a key element of building consumer confidence in CER, however, we don't have specific advice as to the best methods of ensuring compliance. We have previously advocated for a separate governance body, such as a new national consumer energy resource technical regulator which we consider would have the expertise to determine the best measures.

33. Are you aware of any consumer energy resources for which non-compliance with standards is common?

As mentioned in response to question 30, the recent AEMC review into CER technical standards outlined significant non-compliance with existing standards, namely AS4777.2:2020.[111] This standard applies to household rooftop solar and electric vehicles exporting energy to the grid.[112] [113]

34. Which existing or new bodies would be best placed to detect and respond to non-compliance with standards for:
    - Products?
    - Installation?

As mentioned in response to question 30, we have previously recommended that a new governance body, overseen by the AEMC, should be established to apply a broader policy framework and coordinate roles and responsibilities in all phases of the policy framework.[114] This should include consumer outcomes analysis, creating and mandating standards, installer education, and compliance and enforcement.

In considering how technical standards are set, we have identified a clear gap between the framing of integrating consumer energy resources from a consumer outcomes perspective and the design of technical standards. Our concern is that if this gap continues, along with failure to recognise consumers' capability to shape market outcomes, the result could be both market and consumer losses at worst and sub optimal market and consumer benefits at best. In this context, a separate standing governance body, overseen by the AEMC, could fill this gap and connect the policy direction with the technical requirements.

Having an overarching governing body with the capacity to comprehensively investigate and review the intent of a technical standard from a consumer outcomes and consumer energy resources perspective requires knowledge and insights from many different stakeholders including industry, consumer organisations, technical experts, technology providers and manufacturers, installers, OEMs, jurisdictional governments, networks, and retailers. As it currently stands, there is no body with this diverse representation. Therefore, we have recommended a new governance body, overseen by the AEMC, that includes diverse stakeholders, empowers a consideration of consumer outcomes, and holds space for initial discussions on the purpose, intent, policy, implementation, and regulation (including compliance and enforcement) related to CER technical standards.

35. Do existing bodies have the right enforcement powers?

[111] AEMC, *Review into Consumer Energy Resources Technical Standards* (September, 2023).
[112] GSES, *AS/NZS 4777.2 2020 Updates – What You Need to Know* (2021).

[114] ECA, *Submission to the AEMC Draft Report: Review into Consumer Energy Resources Technical Standards* (June 2023) p 2.

“How” technical standards are mandated and enforced, and “who” is responsible for mandating and enforcing, are two key questions we see as unanswered in the current technical standards process. As such, we recommend implementing a comprehensive policy framework and establishing a new governance body to apply this framework, as a clear, implementable and practical solution to address and clarify the “how” and the “who.”

Without clear roles and responsibilities assigned to an overarching body, a policy framework will be less likely to deliver technical standards which achieve positive consumer outcomes. Ideally this body should be a new national consumer energy resource technical regulator that is independent and can maintain transparency. This new body would effectively undertake broader coordination to ensure each party responsible for each stage of the policy framework is fulfilling their role, including enforcement.

36. How should NSW require installers to provide information about consumer energy resources to DNSPs for the DER Register?

No response.