



Friday, 1 March 2024

Via email: energy.consumerpolicy@dpie.nsw.gov.au

Clean Energy Council Submission to NSW DCCEE's Consumer Energy Strategy: Households

Dear Jane Gibbs,

The Clean Energy Council (CEC) welcomes the opportunity to provide feedback to the New South Wales (NSW) Government's Consumer Energy Strategy: Households (the Strategy).

The CEC is the peak body for the clean energy industry in Australia. We represent and work with Australia's leading renewable energy and energy storage businesses, as well as accredited designers and installers of solar and battery systems, to further the development of clean energy in Australia. We are committed to accelerating the transformation of Australia's energy system to one that is smarter and cleaner.

The development of a Consumer Energy Strategy by the NSW Government is strongly supported by the CEC and viewed as an essential step in the continued integration of consumer energy resources (CER) into Australia's energy systems.

The greatest opportunities to enhance consumer agency and participation in Australia's transition to clean energy reside in CER, and the CEC commend the important work the NSW Department of Climate Change, Energy, Environment and Water are doing. By improving approaches to CER deployment, demand response, equitable access, and implementation of standards we can make the energy transition faster, cheaper, smoother, and more secure.

Key Points for Consideration

Education is essential for consumer empowerment

The limited understanding of the benefits of CER products, services, and technologies remain a major barrier to household participation. The CEC recommends the NSW Government consider developing an education campaign towards households and traditionally excluded consumer groups to encourage CER uptake and promote consumer empowerment. This campaign should seek to provide trusted community advisors with information and knowledge that can be shared with consumers. Additionally, those without the ability to participate in CER should still be well-informed regarding the benefits and potential impacts on their own households. Targeted education and

consultation reduce negative impacts on non-participants may result in better integration of CER into the community, resulting in net benefits for non-participants.

A state-wide education campaign would include community consultation groups with a focus on awareness and understanding of uncertainties regarding new energy products and services. A community engagement review could be part of this process, with funding provided to local councils and community groups for specific programs.

Incentives accelerate CER uptake

The high up-front costs make CER a significant investment for many Australian households, delaying a commitment to purchase. A key solution to address this barrier is the introduction of incentive schemes, particularly for rooftop solar and battery home systems, as these remain the most expensive assets. The adoption of incentives encourages significant CER benefits, ranging from reduced consumer energy bills, large-scale transition support, improved energy reliability and a decreased carbon footprint in households.

The effectiveness of incentives is witnessed both at the state and federal level, with solar uptake driven by successful programs such as the Small-scale Renewable Energy Scheme and the Victorian Solar for Homes Scheme. Well-designed government incentive programs are an essential element to diffuse upfront costs and can assist traditionally excluded consumer groups to take up CER assets and services. It is the CEC's preference that the NSW provides upfront rebates as incentives, these programs have a proven record of achievement in generating the highest uptake by consumers.

The CEC recommends the NSW Government consider the addition of new incentive schemes such as a Home Battery Saver Program and an Energy Productivity Scheme to best capture the net benefits of CER and improve the affordability of electricity for all residential customers. The details of these programs and supporting evidence are described further in the CEC's response to the consultation questions.

We offer the above considerations as a means of improving the impact the Consumer Energy Strategy will have in building consumer awareness, agency, and trust in CER. We are interested in ongoing involvement in the development and publishing of the Strategy and view this an important step in securing the best practice implementation of CER in NSW.

If you have any queries or would like to discuss the submission in more detail, please contact Con Hristodoulidis at christodoulidis@cleanenergycouncil.org.au.

Kind regards,



Con Hristodoulidis
Distributed Energy Director
Clean Energy Council

NSW Consumer Energy Strategy Consultation Questions

Objectives

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?

The proposed objectives for the Household Energy Strategy align well with current work undertaken to drive CER integration and are fully supported by the CEC.

We recommend linking the objectives for the Household Energy Strategy to national outcomes and targets, indicating how this body of work can complement federal programs such as those aiming to establish a national technical standards body. This will ensure the Strategy facilitates CER integration both within NSW and nationally.

Principles

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?

The CEC supports the implementation of these principles for the Strategy, however there is room for further exploration within these concepts.

Whilst consumer empowered is detailed, consumer agency that affords choice and participation should be more heavily emphasised. This ensures that consumers are successfully engaged, and ownership of choice is given to both participants and non-participants. The inclusion of consumer agency would highlight the importance of implementing a major education program, surrounding the benefits of CER.

In addition to the proposed principles, we also encourage consideration of the following principles:

- The importance of local manufacturing and supply chain integration, this would consider the added value of local manufacturing and workforce development in the uptake of CER in NSW to support the Australian clean energy sector.
- The integration of consistent regulations both between NSW DNSPs, and when possible, regulatory frameworks in other jurisdictions, and at the national level.

Encouraging Deployment

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 grid supplied energy.

The CEC views the role of CER to primarily reduce energy prices for consumers, promote energy agency and independence, as well as support the transition to net zero emissions. In comparison to CER in C&I and grid supplied energy, CER empowers consumers to actively control and influence their energy needs and is consistently well-supported by consumers with a strong social license. Additionally, as these are consumer-owned assets and investments, they gain a greater degree of individual influence over their emissions compared to grid supplied energy.

As CER has a strong social licence it can play a critical role in the energy transition. It is low-cost, it can be delivered at speed, there is already strong buy-in and participation. This will complement reaching renewable and net zero targets in the early stages of the transition as large scale renewables work through planning, social licence, and financing constraints.

Further, the CEC believes CER also provides financial value in the operation of the energy market. CERs, and VPPs provide the benefit of transforming and managing risk (for example, avoided hedge instrument procurement costs due to VPP co-ordination where the cost of those instruments includes expected spot market outcomes, risk, credit, and liquidity premiums) as they continue to evolve.

When considering the scale of C&I, it rapidly supports decarbonisation due to the greater accessibility of markets such as FCAS and Demand Response incentives. Hence, for CER to be more engaged with network-facing investments, there needs to be an uptake of network-based incentives and access to financial benefits for grid participation. This will allow CER to play a greater role in supporting the clean energy transition whilst large-scale renewable projects are still in the planning or non-operational phase.

4. What do you see as the key barriers to increasing the uptake of consumer energy resources?
 - a. Consider all types of consumer energy resources be encouraged by the NSW Government

The CEC identifies several key barriers to increasing the uptake of CER.

Upfront Costs

The high upfront costs indicate CER is a significant investment for many households, resulting in time needed to both save and commit to the purchase. This can often be offset with the introduction of incentive schemes for rooftop solar and home battery systems, as these tend to be the most expensive purchases for households. Additionally, compensation for households delivering energy services through CER, with either demand response pricing or orchestration incentives, will allow consumers to recover costs once the investment has been made.

The effectiveness of incentives is proven, solar uptake in Australia is the highest per capita in the world through the support of a stable and well-known small-scale renewable energy scheme (SRES). Incentives for batteries are a key next step for consideration when addressing barriers to increasing the uptake of CER.

The key benefits for home battery storage include:

Reduced Energy Bills

- Stored solar energy reduces reliance on the grid and lowers energy bills. CSIRO modelling for the ECA Stepping Up Report¹ found that households that install rooftop solar and a battery can save up to \$1,250 pa by 2030, projected to rise to \$1,420 pa by 2040.

Support of the Large-scale Transition

- AEMO states that duplicating 20% of the assumed orchestrated fleet by 2040 with utility scale assets will result in an additional capital spend of \$1.8bn.

Improve Energy Reliability & Resilience

- Consumers can protect themselves from power outages.

Wider System Benefits

- Solar storage solutions can dampen wholesale costs and delay the need for network investment. Storage can also ensure better utilisation of the distribution network by shaving evening peaks (e.g. 8GW from 2035 to 2040) and soaking solar generation in the middle of day to avoid minimum demand events.
- Oakley Greenwood determined the gross market value of a battery in NSW to be in the order of \$2k if un-orchestrated and \$6k if orchestrated.
- NERA (National Energy Resources Australia) Economic Consulting and Energy Synapse modelling for ARENA (Australian Renewable Energy Agency) predicted system savings of \$8-18b from energy storage behind the meter.² Race2030 estimated \$455m value from flexible demand.³

Reduced Carbon Footprint

- Reduce reliance on sourcing energy from grid-based high carbon emitting generators, helping combat climate change. NERA Economic Consulting and Energy Synapse modelling for ARENA predicted emissions decrease on average by 3Mt from 2035 to 2040.

State schemes can contribute to addressing this barrier, Victorian and South Australian battery schemes have shown notable uptake, as can be seen in the figure below. In early 2024, the CEC launched a federal home battery saver program, outlining the net benefits and improving the affordability of electricity for all residential customers.⁴ These programs highlight the role for NSW to complement this work with their own scheme and target rebate programs for lower income consumers and those in rental and social housing.

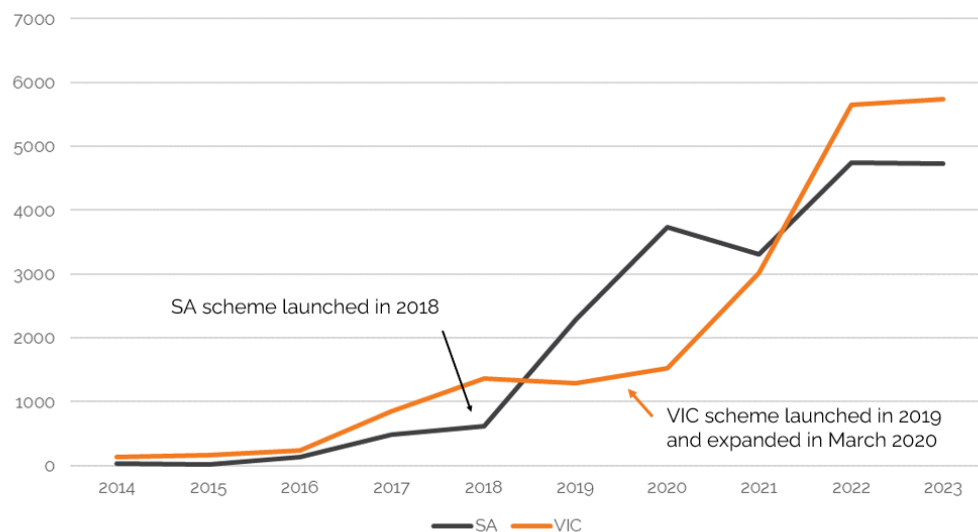
¹ [Stepping Up \(energyconsumersaustralia.com.au\)](https://energyconsumersaustralia.com.au/stepping-up)

² [Energy Synapse | Brighter Energy Decisions](#)

³ [RACE-B4-OA-Final-report.pdf \(racefor2030.com.au\)](#)

⁴ [PowerPoint Presentation \(cleanenergycouncil.org.au\)](#)

ANNUAL SA & VIC HOME BATTERY INSTALLATIONS



Sources: Clean Energy Regulator, July 2023 [State data for battery installations with small-scale systems \(cleanenergyregulator.gov.au\)](https://www.cleanenergyregulator.gov.au/state-data-for-battery-installations-with-small-scale-systems)

Lack of Education

Limited understanding of the benefits of CER technologies by consumers serves as an additional barrier, preventing households entering the market. This highlights the importance of a targeted State Government led education campaign towards households to encourage CER uptake. A state-based campaign should target trusted advisers and arm these trusted advisers with information and knowledge. Trusted sources such as electricians and community members play a vital role in information sharing as well as independent sources such as the Energy Made Easy website.

Equity Issues

Equity issues arising from the lack of access for consumer groups such as renters, apartment-dwellers and tenants in social and public housing continue to increase the gap between benefits for participants and non-participants in CER. These must be adequately addressed within the Strategy and could be implemented through similar schemes as Victoria's Solar for Apartments Program.⁵

We also encourage the NSW Government to show leadership and set a target to include solar (and where appropriate, storage) on all Government owned assets by 2030.

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

The uptake of CER should be heavily encouraged and supported by the NSW Government as it aligns with their climate targets, addresses cost of living and ensures energy resilience in the future.

In addition to the solutions already proposed above, uptake can be effectively encouraged by:

⁵ [Solar for Apartments | solar.vic.gov.au](https://solar.vic.gov.au)

- Introducing two-way CER tariffs that promote efficient utilisation of network capacity and importantly do not curtail renewable generation at the expense of higher polluting central generation.
- Government incentives for smart home CER devices, including load control, electric vehicle (EV) chargers and solar PV heat pumps.
- Investment into CER for public, social and affordable housing, including engagement with tenants.
- Programs that encourage market conditions with fair compensation for consumer participation.

Targets

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

The CEC is supportive of the NSW Government setting specific targets for CER products, technologies, and services. Targets provide a clear guideline for the Government to follow, driving investment and consumer awareness, whilst also establishing a benchmark that can be monitored to achieve goals. However, an important consideration is the integration of targets within policy frameworks, ensuring there is a defined path of action that can be practically adopted.

The CEC does support the NSW Government in setting a target to instal solar (and where appropriate batteries) on all social and community housing by 2030. Further, targets can emerge from the outcomes of this strategy, highlighting areas the Government has deemed high priority for CER uptake, such as renters and small business who lease premises. The monitoring of progress towards targets should involve quantifiable indicators, able to be measured in regular intervals. These should be transparent and independently verifiable, allowing additional policy to be put in place if milestones are not achieved.

Incentives

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

AEMO's 2024 draft Integrated System Plan (ISP) predicts that orchestrated and passive consumer energy resources will play a significant role in Australia meeting its renewable and climate change target as part of the least cost step change pathway. The CEC notes that the draft 2024 ISP's forecast of Consumer Energy Resources (CER) models a four-fold increase in rooftop solar capacity in the step change scenario, reaching 86GW by 2050, 17GW higher than the same scenario in the 2022 ISP.⁶ This seems reasonable given Australians have the world's highest adoption rates of rooftop solar as they seek to smartly manage their energy usage and costs.

To achieve these CER forecasts, AEMO clearly states that we need to put in place the right policy levers. This ensures consumer trust and encourages the right incentives to actively take up solar PV, home batteries and associated orchestration services. As we mentioned earlier one of the barriers to CER uptake is the up-front costs. Well-designed government incentive programs will be a crucial element ensure we diffuse these upfront costs and encourage consumers to take up CER assets and services.

By way of example, the CEC recently released its 'Time to Back Batteries' policy platform which shows that up-front incentives for batteries up to \$6,500 will result in additional 40,000 home

⁶ [AEMO | Draft 2024 ISP Consultation](#)

batteries, reducing bills for consumers who purchase the batteries and participate in orchestration services by up to \$1,150 and generating \$190m system wide system benefits for all energy consumers⁷.

As such, not only does the CEC support the NSW Government in providing incentives to encourage uptake of CER but we believe it is essential to do so as they drive down the costs of the energy transition. The Energy Savings Scheme and the Peak Demand Reduction Scheme (PDRS) are current examples that should be continued and enhanced through consideration of energy source rather than just product categories.

We are supportive of the NSW Government's recently expanded PDRS, encouraging the uptake of technologies like batteries and associated virtual power plant programs that focus on performance of the asset, such as requiring a minimum level of efficiency and yield over a timespan. We would encourage the NSW Government to extend the PDRS beyond the limited scope of four peak events during summer and consider the wider system benefits these technologies generate. In particular, the NSW Government could consider merging and broadening the two Schemes into a new Energy Productivity Scheme, as seen when the South Australian Government changed from an Energy Efficiency to a Productivity scheme.

Additionally, an Energy Productivity Scheme that allows consumers to bundle incentives provides an easy option for customers looking to overhaul their home energy systems. This would allow one claim for products such as solar PV, home battery systems and electric hot water, increasing their likelihood of multiple CER uptake.

Critical to any incentive scheme is the need to ensure the quality of the installation and products. Hence, it is important that any incentive scheme is complemented with a robust installer and product accreditation program that also includes monitoring through a refined products list, this ensures transparency and quality in the types of technologies installed in homes.

The CEC's preference is that incentives should be upfront rebates. Rebate programs have a proven track record of generating the highest take up rate by consumers. However, if the NSW Government consider no interest or low interest low schemes, then we offer the following state schemes as example as potential design:

- The Victorian Government's solar incentive schemes.⁸ These have an ongoing record of accomplishment of successful uptake, and the monitoring and evaluation of the program would provide a strong source of information for NSW to adapt. Furthermore, adaptation from the Victorian Government would ensure consistency in schemes across jurisdictions.
- The ACT Government's Sustainable Household Scheme (SHS) which offers ACT consumers zero interest loans with no fees to improve energy efficiency in the home.
- The Tasmanian Government's Energy Saver Loan Scheme (ESLS). These programs have been incredibly successful with over \$219 million in upgrades provided to over 20000 households.

⁷ PowerPoint Presentation (cleanenergycouncil.org.au)

⁸ Solar Homes Program | solar.vic.gov.au

The following table provides an overview of various state-based batteries incentive schemes for consideration to the NSW Government in constructing a battery incentive scheme.

Scheme	Jurisdiction	Targeted Take-up/ Actual Take-up	Scheme overview	Impact on Incentivising Orchestrated Batteries
SA Home Battery Subsidy Scheme	SA	Target: 40,000 subsidies Overall delivered: ~39,000	\$200 – \$400/kWh (incentive started at the higher range and was reduced over the life of the program) Change of Government and scheme repealed before it could be fully exhausted	High – even though there was no “hard” requirement to join a VPP, the program led to multiple aggregators and retailers launching VPPs in South Australia. The SA Government advertising existing VPP offers on the Home Battery Subsidy Scheme landing page also led to a much higher VPP attachment rate in SA than any other state. PV / Battery attachment rate of ~50% vs national average of less than 10%
Solar Victoria – up-front incentives	Vic	Target: 17,500 Overall delivered: 15,230 subsidies (then transitioned to loan – see below)	~\$300/ ~\$300/kWh – with additional limitations on postcode eligibility (initially, subsequently removed) and income thresholds. <ul style="list-style-type: none">Separate VPP program set up for a portion of systems with a higher rebate attached.Scheme transitioned to zero interest loan program before fully exhausted.	Limited to moderate – was established only as a pilot project with 1000 subsidies attached. The higher incentive likely attracted many to join a VPP who would have otherwise accessed the standard subsidy; however, the limited number of selected aggregators/ retailers impacted the pilot effectiveness.
Solar Victoria – zero-interest loans	Vic	Target: 4500 Overall delivered: ~1000	Zero-interest loan of \$8,800 <ul style="list-style-type: none">Income assessment threshold - initially \$180,000pa combined h/h and then raised to \$210,000pa	Too early in scheme to understand impact on driving incentives to participate in orchestration
ACT NextGen	ACT	Target: 5000 Delivered: 5000	\$825 per Kw <ul style="list-style-type: none">No additional eligibility criteria for participation.Data sharing requirements for participating OEMs and suppliers.	Program did not require orchestration and no public evidence available on how many of the 5,000 installs participated in a VPP program
NSW Empowering Homes	NSW	Target: 300,000 zero interest loans Overall delivered: ~500	Zero interest-loan program <ul style="list-style-type: none">Additional limitations on eligibility – income thresholds and postcode limitations that were never removed.Requirements on industry to provide substantial amounts of data to participate in program (large uplift for very few systems)Program repealed	Program did not require orchestration and no public evidence available on how many of the 5,000 installs participated in a VPP program

Communication

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

Access to information about CER is essential for both consumers and non-participants to make informed choices and establish agency. When considering equity in CER, those without the ability to participate in CER should be well-informed in the benefits and impacts on their own households. Whilst it is important for the NSW Government to be providing information regarding CER, this may be better achieved through an independent source or educational campaign targeted towards trusted bodies. Lack of public understanding surrounding CER remains one of the biggest barriers in uptake, hence the Government should place funding towards the establishment of an education program targeting community leaders, installers, and key organisations to better inform the public.

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

The CEC supports the implementation of mandatory residential energy performance disclosure in NSW. When considering transitional measures, an opt-in scheme could be adopted prior to becoming mandatory, providing information on key challenges and areas for improvement. In addition, planning of the workforce development and skills requirement would establish a timeframe to allow for sufficient industry preparation.

Complementary initiatives could take the form of free audits or product incentives to households, encouraging improved performance of owned or leased households. The Australian Capital Territory (ACT) currently has a mandatory disclosure framework, providing a strong outline for information for the NSW Government to adapt and learn from.

10. What are the priorities for improving communication of information in terms of:

- Types of households?
- Technologies?
- Tariffs?
- Consumer rights and protections?
- Government or industry programs?
- a. Which of these are best done by:
 - Industry or non-government bodies
 - The NSW Government
 - The Commonwealth Government
- b. What channels do you have available that could share NSW Government communications?

Types of Households

Priorities for communication should include benefits available to households that both can and cannot participate in CER. This should also highlight additional CER options for electrification for households that are currently unable to participate due to leasing arrangements or lack of roof space. Information on how the energy system works, consumer protection and dispute resolution should also be prioritised.

Technologies

There is a role for NSW government to promote the minimum installer and product standards associated with any technologies supported by an incentive scheme. Such information is critical in building consumer trust. We also believe as part of this communication, the Government provide clarity as to how consumers can seek redress by clearly outlining the roles and responsibilities of each party in addressing consumer complaints.

Consumer Rights and Protections

The New Energy Tech Consumer Code (NETCC) that was developed by consumer groups and industry and has Australian Competition and Consumer Commission (ACC) accreditation is the best example of consumer protections available. We believe there is a role for the NSW Government to promote the NETCC to consumers who purchase CER products and services given approved sellers, have agreed to meet certain consumer protection standards that cover sales, quotes, contracts, installation, warranties, and support. Importantly, approved sellers have committed to fair, transparent and quality service. The CEC believes the NETCC can play the same role that the red tick plays for the Heart Foundation in that consumers can feel confident and trust an approved seller.

Government/Industry Programs

Information about incentives programs is crucial in supporting consumers understanding of what is available to them and how to access the incentive. There should be dedicated websites for existing programs and tools, such as calculators, as many consumers' search for information online. The recently released Federal Government Solar Consumer Guide⁹ is a good example of the type of information the NSW Government can provide across the range of CER products and services available.

Sources of Information

When considering information sources, non-government bodies and industry are well-placed to communicate information and technologies and comparison of programs. These should be well-supported with the NSW Government providing information campaigns regarding their own schemes or programs introduced. However, trusted sources for communities often involve members or broader networks, therefore it is important to ensure that this information filters down and is not only accessible for consumers that seek it out.

The CEC has previously recommended the AER (Australian Energy Regulator) develop an online one stop shop for consumers in the form of a website, modelled off Energy Made Easy.¹⁰ Consumer Energy Resources Made Easy (CERME) would assist customers making purchases or changes relating to their CER products and services by offering comparison of different export services (and other services) through a free, independent government service. This is best enacted whilst there is small market penetration and allows for the website to build improved capability as the market upsizes. The use of a website will allow greater access in regional areas and form a point of contact for customers with limited relationships with their DNSPs, retailers or installers. It is recommended the NSW Government work closely with the AER to develop this type of information source, ensuring state-specific CER products and services are well-communicated.

The CEC has several channels it would be able to share NSW Government communications. Our members regularly are provided with email communications and the Distributed Energy Directorate comprises of over 400 members for consultation and information sharing.

Local Network Storage

11. What role could community batteries play in alleviating network hosting capacity and improving household access to storage?
 - a. What are the key barriers to rolling out community batteries?
 - b. Which proponents are best placed to provide community batteries and why?
 - c. Are the roles and responsibilities to supply community batteries clear? If not, how could they be improved?
 - d. What type of information do consumers need about community batteries to access them?
 - e. What is the role for government in relation to community batteries?
 - f. How can community battery value stacks be better unlocked?

It is unclear what the consultation question is referring to by community batteries, i.e. batteries owned by communities behind-the-meter or front-of-meter. The following table is provided as input to the NSW Government's consideration of this question.

⁹ Solar Consumer Guide | energy.gov.au

¹⁰ Energy Made Easy

	Behind-the-meter VPP	Front of the Meter Community Storage
Incentive Required	<p>SA Home Battery Subsidy Scheme: ~\$200-400/kWh (incentive started at the higher range and was reduced over the life of the program)</p> <p>Solar Victoria: ~\$300/kWh (note this was a flat rebate which worked out ~300/kWh for an average 10kWh battery installed)</p>	<p>DCCEE Community Battery Fund: >\$1600/kWh (note max cost per project was ~2500/kWh)</p> <p>Victoria Neighbourhood Battery Initiative: ~\$2400/kWh (considering implemented projects only – not project business cases)</p>
Land Access Requirements	None – installed behind the meter as a physical asset. Located at a customer property (usually residential)	Land access negotiation required – either council land or negotiation with distribution network utilities to host assets.
Network Tariffs	<p>Most distribution networks offer a form of solar sponge or two-sided tariff that is well suited to BTM battery operation.</p> <p>Batteries also charge from solar, rather than from the grid, so avoid distribution use of system charges.</p>	<p>Most community batteries will both incur distribution use of system charges and may also be subject to commercial peak customer rates.</p> <p>Very few tariffs currently exist that are well suited to community batteries, though some NSPs are looking at limited trials.</p>
Ownership	Assets can be owned by either site, or by a third-party owner. No regulator barriers.	<p>Network owned assets only permitted within narrow ring-fencing waiver scope for projects captured under the federal community storage program.</p> <p>Community owned assets are complex and have not been able to scale.</p>
Connection Point	<p>Assets sit behind a single connection point. No additional costs.</p> <p>Connections within the micro-embedded generator connection requirements and usually accepted within 30 days.</p>	<p>A second connection point would need to be established.</p> <p>Grid connections fall outside of the automatic micro-embedded generator connection approach and are more time-consuming >6 months.</p>
Market Access	Where third party owned, that third party can directly act as the market participant	The network will need to partner with a third party to access markets. This adds cost.
Network Services	A portion of the battery can be allocated with services provided as a non-network solution.	A portion of the battery can be allocated as a network asset (if network owned) or non-network solution if community owned).
Customer/Site Benefits	Reduced energy use/ bill savings. Options for value pass through back to site.	No direct benefits. Would need to be negotiated.
Revenue Stack	<ul style="list-style-type: none"> • Avoided customer consumption/ customer retailed energy. • Energy arbitrage • FCAS/ FFR (depending on the asset used) • Network services • Tariff optimisation 	<ul style="list-style-type: none"> • Energy arbitrage • FCAS/ FFR (depending on asset used) • Network services

The CEC also notes the launch of the Federal Government's Community Energy Upgrades Fund Program.¹¹ We would encourage the NSW Government to consider a similar type of grants program for local communities who may be interested in establishing a community battery.

¹¹ [Community Energy Upgrades Fund Program - DCCEE](#)

Improving Equitable Access

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

The current barriers existing to household access to CER differ across consumer groups and household types.

Public housing residents have minimal input of the installation of CER in their residence and the decision remains with the NSW Government, indicating the need for CER targets on Government owned assets. As part of any program, it is also critical the Government develop and implement a communication plan to inform residents of any disruption to their living circumstance during installation and outline the benefits of the installation to consumer energy costs and bills.

Apartment residents are often excluded due to a lack of suitable roofing space or complications with negotiating installations with the body corporate.

Renters often face insecurity of tenure when seeking to invest in CER, creating a reduced incentive for them to install on the property. Additionally, the tenant-landlord split incentive provides a minimal financial incentive for landlords to install CER on rented properties.

Regional households may have difficulties in sourcing installers and products or increased prices for installation due to their rural location and difficulties connecting their system securely to the grid. Those households wanting energy security may also opt for a diesel generator over a home battery system due to high upfront costs.

13. How can the NSW Government best improve access to consumer energy resources for:

- Private renters
- Social housing residents
- Low-income households
- Apartment residents
- Regional and rural households
- Any other vulnerable groups?

The NSW Government could reduce barriers to CER through several targeted strategies to different household consumers. The provision of incentives to landlords to install energy efficient appliances and CER on their properties will reduce the lack of financial motivation to electrify rented homes. This could be accompanied by minimum requirements for energy efficiency or electrical consumption on rented properties.

Social housing residents could directly benefit from direct investment by the NSW Government into energy efficiency upgrades and shared solar and battery systems on the properties. This could integrate peer-to-peer trading platforms or virtual power plants (VPPs) specifically developed for social housing.

Low-income households would benefit from the introduction of targeted hardship programs that provide CER access for those unable to afford the investment, this could be created in partnership with an energy hardship program, as adopted by the Victorian Government.¹² It is recommended that the NSW Government refers to the design and implementation of the Victorian Government in creating programs to target equitable access.

¹² [Help paying your bills \(energy.vic.gov.au\)](https://energy.vic.gov.au)

Apartment residents would benefit from reforms relating to strata title laws, reducing the complexity of CER installation in their households. Additionally, the implementation of a targeted incentive scheme such as Solar for Apartments, as previously discussed would improve CER access.

Finally, improving access for regional and rural households should arise in support for measures than improve resilience and consumer agency. These would support mechanisms such as feed-in tariffs, demand response actions and provide incentives for battery home systems so they become a preferred option over diesel generation. Additionally, access to greater public EV charging would reduce barriers relating to range for rural households considering an EV purchase.

Low-income Household Access to CER

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

The role of the NSW Government in driving uptake is detailed in Q13. The private sector and community organisations can participate in education programs to ensure those participating as well informed of their options and consumer protections.

Social Housing Tenants

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?
- What sources of additional investment or innovation could help increase the number of homes upgrades across NSW?

As previously outlined, targets or minimum requirements on social housing would ensure greater uptake of CER in these households. Additionally, coordination across different areas of Government e.g. finance and procurement departments would ensure that priorities for reduced energy bills and liveability are consistent. Additional investment within this residential category could take the form of stronger community engagement and empowerment, ensuring tenants understand the value of CER in their homes.

Private Renters

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

The CEC supports minimum energy efficiency rental standards with mandatory disclosure. This should occur as part of a coordinated effort to increase both the safety and efficiency of existing building stock, prior to the installation of CER. Rather than incentivising landlords to install new technology, they should be required to demonstrate their property is meeting minimum safety and energy standards prior to receiving the incentive. This would serve as a transitional measure to ensure the building stock meets a minimal threshold and increase liveability for tenants. Potential tools could include free energy and safety audits and information provided to real estate agents when the house is renewed for lease. Additionally, the NSW Government should establish a website for reporting non-compliant properties for review.

The CEC would like to be consulted as part of further investigation on this matter.

Apartment Residents

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?

The role of the NSW Government in driving uptake is detailed in Q4 and Q13. The private sector and community organisations can participate in education programs to ensure those participating as well informed of their options and consumer protections.

Coordinating Demand with Supply

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

The NSW Government should encourage a regulatory environment that best matches grid supply needs through the incentivisation of both coordinated and aggregated CER. This could involve support for opt-in strategies for flexible exports and VPPs and would be driven by simplified market mechanisms, allowing households to access grid-supporting rebates such as demand response mechanisms.

Additionally, the NSW Government should consider coordination of home battery storage as a support to households with existing rooftop solar and the introduction of VPP incentive programs. Further investment opportunities arise from smart grid technologies, able to support the deployment of VPPs and successfully integrate CER in the energy market.

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

The priorities identified are supported by the CEC.

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

Demand response initiatives should be primarily designed to communicate the benefits and values of services provided to customers, creating an attractive opt-in system. The program should be easily understandable with a fair distribution of benefits and accessibility to a range of customers.

The CEC supports voluntary participation within these initiatives, given they are accompanied by clearly defined roles and responsibilities and pathways for consumer protection. This ensures consumers are easily able to opt-in or out and easily understand the process for dispute resolution.

High quality consumer protection should prevent unexpected costs or poor reliability of services, with transparency in the mechanism of the initiative.

Incentives should be introduced without cost to non-participating consumers and could take the form of financial benefits such as reduced tariffs during demand response events or rebates. The level of incentive should reflect the value of the customer contribution during a demand response event and consider the potential costs associated with participation.

Technical Constraints

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?

The promotion of visibility for networks surrounding energy production and consumption will provide additional data to that already available from smart network meters. This can be paired with investment in upgrading grid infrastructure to allow for more flexible energy flow when accommodating higher levels of CER uptake. Additionally, grid-enhancing technologies can provide voltage support and frequency regulation. The introduction of battery storage, advanced inverters and energy management systems will assist in grid stability and reduce demand and supply variance.

Finally, the benefits and potential considerations of CER should be well-communicated to consumers, including how their technology supports grid stability and participation opportunities. Establishing a dedicated educational program, ensures consumers are well-informed about energy markets and allows for greater agency and choice surrounding grid contributions and energy use.

Communicating with Consumer Energy Resources

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?

The CEC supports AEMC's proposed smart meter penetration goal of 100% by 2030. Smart meter information is essential for effective management of grid operations and ensuring well-coordinated CER integration. However a national framework should be established for interoperability of CER and distribution networks, this would seek harmonise approaches amongst jurisdictions. An example of this issue arising is the utilisation of the Australian Common Smart Inverter Profile (CSIP-Aus) by South Australia and Victoria, whilst Queensland has implemented an independent approach. It is recommended, consistency should be a key priority when communicating with CER in NSW and previously established communication approaches, such as CSIP-Aus, are maintained.

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

As previously recommended, the common data framework for CER in NSW should adopt CSIP-Aus.

Raising Standards

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

Consumer confidence arises from good education campaigns targeting awareness and comprehensive understandings of energy systems. These should aim to inform households of the benefits of CER and identification of trustworthy and high-quality products and providers. It is recommended the inclusion of NETCC approved products within NSW Government incentive schemes will guide consumers to understand reputable services and create an environment of trust when purchasing products with a blue tick.

Additionally, the NSW Government could require standardised information disclosure on all CER products and services as transparency results in informed purchases. These would outline the warrantee terms, product performance and relevant certifications. The Victorian Government currently has a mandated warrantee of five years on heat pumps, and it is recommended the NSW Government introduces mandatory warrantees on certain products to alleviate risk for consumers. Whilst not all products come from local manufacturers, the inclusion of a warrantee program with the ability to be audited and clear processes outlined in the Australian Consumer Laws would ensure dispute resolution is well-outlined and consumers have a pathway to action.

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

Key challenges lie within the interpretation and implementation of the standards or technical requirements, this could be addressed with well-defined roles and responsibilities of all parties involved. Technology advancement also poses a key challenge as standards must be rigorous to ensure safety and reliability, however, there needs to be accommodations for new productions and compatibility between CER technologies. Finally, there is limited consumer understanding or engagement with technical standards, creating barriers to identification of non-compliance.

Setting Standards

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?

Sufficient industry standards and technical requirements currently exist from both Standards Australia and additional parties. The key issue currently arises from a lack of national consistency, interpretation and implementation of standards and well-defined roles and responsibilities. The NSW Government can play a role in the establishment of the National Technical Standards Body as announced by the Commonwealth Government through consultation and funding of education programs for installers and households.

Prevention

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?

The Commonwealth Government is best placed to implement capacity building and training for the industry to ensure consistency in safety, quality, performance, and recycling of CER. Whilst these initiatives can have support from state government and industry, a national framework would ensure greater accessibility and securing of funds for implementation.

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

Installers should be required to provide evidence of the correct commissioning requirements when submitting to the network as part of the Certificate Compliance Electrical Work (CCEW). This would also provide proof of correct commissioning is received when submitting to the Clean Energy Regulator (CER) when lodging for small-scale technology certificates (STCs). To bolster compliance with this process, the NSW Government should consider increasing the frequency of installation inspections and penalties could be imposed for both non-compliance and a lack of reporting.

Detection and Response

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

- a. Products?
- b. Installation?

Product compliance is currently covered through existing product testing, certification and listing processes conducted by the CEC and the Electric Regulatory Authorities Council (ERAC).

Installation compliance is recommended to be the responsibility of the CER, implemented by the NSW networks and electrical inspectors. This allows non-compliance installations to have their STC payment held by the CER until the problem is resolved.

35. Do existing bodies have the right enforcement powers?

- a. If not, what extra powers do they need?

Currently networks and electrical inspectors are unable to impose penalties in cases of non-compliance. Whilst the CER does not require information of installation compliance, they reserve the right to request it. The CEC recommends the establishment of the National Technical Standards Body to delegate clear roles and responsibilities when enforcing penalties for non-compliance and dispute resolution.

Reporting

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

The CEC recommends that reporting of DER installations should fall under a consistent national framework of requirements. It is believed this will provide robust jurisdictional and national data under uniform metrics and installers working across jurisdictions will have the same requirements regardless of their job site. Support for this framework could be offered by the NSW Government for installers within the state through designated training programs outlining current CER technologies, reporting requirements and best practice case studies, ensuring the workforce is well supported.