



eec

**Energy Efficiency Council submission to the NSW
Government's Consumer Energy Strategy –
Households consultation paper**

29 February 2024

Introduction

The Energy Efficiency Council (EEC) welcomes the opportunity to make a submission to the Government's consultation on the NSW Government's Consumer Energy Strategy: Households discussion paper. The EEC is Australia's peak body for energy management, electrification and decarbonisation.

The EEC welcomes the NSW Government's initiative in developing a consumer energy strategy to help address the security and reliability of the energy system. Households play an important role in Australia's transition to cleaner energy; while their direct energy consumption is a relatively small proportion of Australia's overall energy use, residential energy consumption tends to be the most mis-aligned with availability of low-cost renewable energy.

This means that any actions taken to reduce the impact of household consumption on the energy system can have a disproportionate effect on reducing cost and emissions. The intent of the strategy to harness the potential of managing residential energy demand as a means to supplement energy security, but there are key considerations to address before households can play that role.

However, the EEC notes that the NSW Government's conceived strategy is very wide in scope, and our advice suffers from a limited time to respond to this consultation. We would also note that there are likely to be significant overlaps between this strategy and the Commonwealth's forthcoming National Energy Performance Strategy, and we urge the NSW Government to make every effort to leverage work already undertaken for that purpose. We recommend that this submission is read in conjunction with our comprehensive advice provided in [our submission to the National Energy Performance Strategy consultation](#).

The EEC has some general overall remarks about the strategy and will also respond to the questions posed in the discussion paper.

General recommendations

1. The CER strategy should be framed in terms that matter to households

The NSW Government's household consumer energy strategy is right to point out the potential for households to contribute significantly to improving the security, affordability and emissions intensity of the NSW energy system. There are substantial benefits that could be captured through effectively involving households in the energy system through improving their energy performance and effectively harnessing distributed energy resources.

However, the Strategy's objectives are framed in terms of the benefits that the energy system could get from households, and consumers are discussed principally as economic agents. Households are unlikely to be responsive to these framing paradigms – the strategy would better be framed in terms of things that matter to consumers.

The EEC suggests that the household Consumer Energy Strategy should focus on things that consumers want and value. These include:

- Comfortable, healthy housing that maintains a safe internal temperature year round at an affordable cost;

- Lower energy bills;
- Reliable access to the services provided by energy, such as heating, cooling, lighting, cooking and appliance use, and
- Reduced greenhouse gas emissions.

These are the things that matter to householders, while the Objectives and Principles articulated in the consultation paper are not matters that capture the attention of householders.

Despite the gap between the focus of the objectives and things that householders value, there is overlap between things that householders value and the Government's policy intent:

- Healthy, comfortable homes are those that are thermally efficient and have effective heating and cooling systems which can be operated affordably. These types of homes also place lower demands on the grid, as they use less energy during times of peak demand in summer and winter evenings.
- Energy bills that are lowered through a combination of supply-side interventions such as increasing the supply of low-cost energy resources, and demand-side action such as improving house efficiency to reduce the volume of energy used support the Government's intention to address cost of living for households, while also reducing the need to build expensive new energy infrastructure.
- Efficient homes are also significantly more resilient to weather extremes and system security events. Efficient homes can also make more effective use of expensive battery energy storage systems, further increasing their resilience to system security events and increasing energy security for households.
- Efficient, healthy, comfortable homes also place less demand on the system at the time when emissions intensity is likely to be highest (e.g. summer evening peak demand, or winter evening heating demand).

The EEC's experience has been that individuals are far more receptive to policy initiatives that are designed to assist them to live in healthy, comfortable homes that are affordable to run, rather than initiatives that seek to 'empower' them as consumers in the energy system.

Further, broader government policy objectives are better supported by thinking about consumer energy in these terms. For example, the Sustainability Victoria Healthy Homes program showed that while energy performance interventions into homes could help households save energy at relatively affordable costs, the direct energy savings paled into insignificance compared with the health savings that accrued from these interventions – **for every dollar in energy costs saved, more than ten dollars were saved in healthcare costs.**¹

Focussing on households through the lens of actors in the energy system is unlikely to be helpful. Indeed, the efforts of attempting to create 'empowered' consumers, able to effect market change through economic actions, have so far failed to drastically improve the energy system – although the adoption of solar PV is a notable exception to this. The CES should focus on improving things that

¹ Sustainability Victoria 2022, [Healthy homes program research findings](#), Victorian Government, pp.7-8

matter to households and reap the benefits to the energy system that will occur as a result.

2. Implement core enabling reforms of residential building rating, disclosure, and minimum rental standards as soon as possible

Australia is missing the fundamental tools to help improve the energy performance of households – those of energy performance rating, disclosure, and minimum rental standards. Without residential energy ratings, the energy performance of existing houses cannot be evaluated and measured. Without mandatory disclosure of energy performance ratings at point of sale and lease, buyers or tenants lack any ability to make an informed decision about the likely performance of a house, and whether poor performance can be easily remedied. Without minimum rental standards, tenants will continue to suffer the split incentives that deliver a universally poor standard of rental accommodation. While we currently have a rating system principally designed for new buildings in place, we do not have a system for rating existing dwellings at scale implemented.

These deficiencies are unnecessary; international jurisdictions – and the ACT – have had effective residential building rating and disclosure measures for existing buildings for decades. Implementation of energy performance ratings, as well as mandatory disclosure at point of sale, will provide clear information to potential buyers, remedying the information asymmetry that currently exists in real estate transactions. Evidence shows that mandatory disclosure, such as through the ACT scheme or the NABERS and Commercial Building Disclosure program, has a material effect on the market and works to raise the average performance of buildings.²

Similarly, minimum rental standards are indispensable regulation to ensure that the rental housing stock meets adequate standards of thermal performance to ensure the health and safety of tenants. Tenants lack agency, incentive or any kind of ability to make alterations to rental dwellings, so regulation to ensure that landlords provide a safe and healthy environment with an acceptable level of energy performance is required.

Our estimates of the national housing stock suggest that more than half of Australia's current residences would achieve a NatHERS base building rating of two stars or less. Focussing on improving the energy performance of these poor performing dwellings, facilitated by mandatory energy performance rating and disclosure, coupled with minimum rental standards, will deliver the greatest benefits to the energy system by reducing demand that is mis-aligned to renewable energy supply.

Implementing an energy performance rating system, and mandatory disclosure at point of sale, along with minimum rental standards, is the critical enabler to improving energy performance in residential buildings,

² ACIL Allen 2016, [Commercial building disclosure program review final report](#), p.ii-iii; Department of Industry, Science, Energy and Resources 2021, [National framework for disclosure of residential energy efficiency information](#), Australian Government, p.5

and must be addressed as the highest priority of a consumer energy strategy for households.

3. Harness efficient, high-performing buildings to best support the grid

The development of a consumer energy strategy should focus heavily on improving the thermal performance of buildings, as well as encouraging efficient electric appliances. Buildings with high thermal performance place the lowest demands on the grid by reducing the volume of energy required to maintain comfortable internal temperatures, as they are better able to resist weather extremes. This means that improving the thermal performance of residential buildings will make a significant contribution to overall grid stability, by reducing demand at times of significant grid stress.

Similarly, high-performing buildings use less energy, meaning they are able to devote a greater proportion of any solar PV generation to the grid, and make more effective use of household battery energy storage. Homes that use less energy are able to use renewable energy infrastructure to more actively contribute to system security through initiatives such as virtual power plants if they wish to.

The Consumer Energy Strategy should embrace a principle of efficiency first, by prioritising interventions that improve the thermal performance of residential buildings.

4. Keep quality, safety and program sustainability at front of mind

As with any program targeting households, program design should have an unrelenting focus on quality and safety, learning the lessons of previous lessons. For example, insulation is one of the best ways to improve household energy performance, but the lessons of the 2010 era Home Insulation Program should be heeded when forming new interventions. Fortunately, there are a range of mechanisms that can be used to effectively manage risk to householders and to government. The EEC would be pleased to provide further information on these strategies.

Program longevity and sustainability are also important parameters. Firstly, programs should scale up slowly and sustainably, to ensure that effective quality and safety controls are in place, and a skilled workforce can be created with sufficient training and expertise to carry out energy performance upgrades in a way that builds confidence. Secondly, program longevity helps build a critical mass of skills and expertise, as well as helps create a pool of advocates in the community who can recommend programs to their peers. Ad-hoc, or stop-start programs fail to build confidence among practitioners and the community, and present risks to safety and quality that should be avoided at all costs.

5. Ensure renters and vulnerable households are not left behind

Around a third of households are renters, and the energy performance of these dwellings must not be neglected. Rental dwellings tend to be relatively low performing buildings, meaning that some of the greatest benefits to the energy system could be reaped by addressing these dwellings. A combination of incentives and regulation to assist landlords to invest in the energy performance

of their rental investment could significantly increase the average energy performance of the residential building stock across NSW.

Similarly, vulnerable households, such as social and community housing, low-income families, and those from culturally and linguistically diverse backgrounds, are at greater risk of being missed by mainstream programs to improve energy performance. The EEC commends the specific focus in the discussion paper on these groups, but notes that specific program design targeting these groups is likely to be needed.

Finally, apartment and strata buildings require special attention. While relatively recent construction is likely to have reasonable energy performance, there may still be challenges for these buildings in electrification. Older apartment buildings may require more substantial remediation to improve energy performance. However, owners' committees may be ill-equipped to understand, plan for, and implement energy efficiency improvements or electrification works, and may require assistance to plan for these upgrades.

There are unique opportunities in larger strata environments where there is committee buy in to complete energy efficiency upgrades and electrification. These include access to facilities management services to coordinate works and financial benefits through the large procurement power of these entities.

6. Plan for the end of residential natural gas use

Although the EEC understands that the NSW Government has not yet made a policy decision to phase out natural gas use, the EEC suggests that drivers within the community towards electrification will likely mean that moves in other jurisdictions to phase out gas use will have an effect on NSW – as well as the movements of local government authorities within NSW.

The NSW Government should consider planning for an orderly gas network phasedown for reticulated gas to residential buildings. While electrification is a key strategy that should be embraced in construction codes for new builds, the ad-hoc nature of electrification of existing households will make operation of the gas network uncertain and more difficult as time goes on. NSW should look to avoid a disorderly phaseout of the gas network forced by external commercial circumstances, as happened in Esperance in Western Australia, but should begin planning now for how it will deal with an orderly phase down of the network. It will be too late once a significant portion of consumers have left the gas network, and the fixed costs of operating the network are becoming too high for the remaining user pool to bear.

7. Ensure rehabilitation of the housing stock has appropriate, dedicated focus

Based on the Australian Housing Dataset, we estimate that around 65 per cent of existing dwellings would score less than two stars on the NatHERS scale.³ This is an unacceptable level of energy performance that puts occupants at risk of

³ This finding is based on data from CSIRO's Australian Housing Data collection of NatHERS certificates for existing houses. At present, more than 96 per cent of all NatHERS certificates issued for existing homes are for Victorian class 1 dwellings, meaning that the data very heavily reflects the Victorian, rather than national housing stock.

preventable disease and energy insecurity, and creates unnecessary burden on the energy system, particularly at peak times.

Without significant action to remediate this housing stock, benefits from investment in a consumer energy strategy will be diluted through needless energy wastage in poor quality housing. This means that quality retrofitting of existing housing stock is critical to the success of the Consumer Energy Strategy, and the NSW Government's policy intention of leveraging the residential sector to build security and reliability in the energy system.

Rehabilitation of this housing stock is a very large task that must be carried out over the next couple of decades. The EEC is pleased to see that the NSW and Commonwealth Governments have already taken concrete steps to work together to address this task, particularly through co-investing in social housing retrofits. However, a range of joint policies and programs are needed to enable the residential rehabilitation task that rely on the capabilities of both governments.

Retrofitting millions of homes will involve a wide range of stakeholders, governments, businesses, trades and professions, training organisations, finance institutions etc. Coordination of national needs, standards, skills and supply chains will help reduce barriers to retrofit and help drive high-quality retrofits that will support the transition to a zero-carbon ready built environment. The EEC recommends that the NSW Government seek to collaborate with the Commonwealth, along with other state and territory governments to work together on coordination and facilitation of residential energy retrofits.

The EEC would be keen to see Australia set up a national collaborative program, inspired by the Sustainable Energy Authority of Ireland, to oversee and facilitate the development of a residential energy upgrade capability at sufficient scale to ensure that the greatest benefits from household energy upgrades are captured. The NSW Government could play a leading role in establishing such a collaborative effort.

Important collaborative work should include:

- Identifying and mapping the necessary skilled trades and professions that will conduct residential retrofits, and ensuring sufficient training is accessible to meet workforce needs;
- Identifying, mapping and addressing required regulatory reforms, including product standards and regulation; licencing reforms, and critical safety and compliance pathways;
- Identifying, and building resilience in critical supply chains;
- Building knowledge and expertise in high-quality residential retrofits.

The EEC is also keen to see the development of dedicated agencies or resources to help dismantle barriers for householders to take action to upgrade their energy performance, such as one-stop-shops or energy upgrade concierge services, that can guide householders through the journey of upgrading their home. The NSW Government could consider establishing these services to link householders with advice, referrals, and potentially finance and incentives to undertake home energy upgrades.

Responses to specific 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?**

As described earlier, the EEC suggests that the strategy should be reframed around achieving things that matter to households, such as healthy and comfortable homes, reliable and affordable access to energy services, lower energy bills and greenhouse gas emissions.

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 principles of the strategy are relatively sound. However:

- The *efficiency* principle is poorly conceived and should be removed. Interventions should be evaluated on their ability to improve the economic, physical and mental welfare of households. A focus on a 'downward pressure on prices' is similarly unhelpful – measures should seek to reduce the total energy costs of households, rather than price (which is cost per unit of energy). Households living in highly efficient houses that consume little energy are likely to be better off and experience a low *cost* of energy, even if the *price* of energy is higher.
 - A principle should be inserted focusing the strategy on improving the energy performance of residential stock to promote improved health of occupants.
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.**

Residential energy performance improvements play a critical role in the energy transition, as described earlier. Improving residential energy performance helps ameliorate challenges caused by the significant disconnect between the predominant time of residential energy use and the times in which low cost solar PV can operate.

Without enhancing residential energy performance:

- Energy demand will be higher, requiring a greater amount of clean energy infrastructure to be built
- Residential energy demand will rely increasingly on generation assets that are very 'peaky', and used only for a short time in the evenings – meaning that their capital and operational costs must be recovered in a short operational period, making them very expensive
- Deployment of solar PV and battery energy storage systems will play a lesser role in stabilizing the grid, as households use more energy to achieve adequate energy services, leaving less surplus generated or stored energy to play a role in grid systems
- Continued reliance on high-volume energy sources, like gas, will create significant cost imposts for those unable to transition to lower-cost energy sources like solar and electricity

- Significant health and wellbeing benefits will be missed, and downward pressures on cost of living will not be realized.

This means that failing to address residential energy performance – including the thermal performance of dwellings – through the consumer energy strategy will leave a range of opportunities to expedite a transition at low cost will go unrealized.

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 including energy efficiency, flexible demand, electrification, solar and storage.

There are a range of barriers to uptake. The principal barrier to uptake is lack of incentive or motivation, but there are a range of other barriers that play out:

- Lack of understanding about the benefits of improved energy performance, and no experience of living in a well-performing house to understand the difference
- Lack of financial resources
- Lack of ability to make material changes for renters
- Lack of awareness of where or how to start improving energy performance
- Competing upgrades – e.g. investing in solar PV at the expense of upgrading insulation or draughtproofing.
- Lack of relevant information about energy performance through a lack of a suitable rating and disclosure scheme
- Lack of interest in participating in advanced schemes (such as virtual power plants or other flexible demand).

However, not all of these barriers are able to be overcome. For example, it is likely that only a very small core of very engaged consumers will be amenable to continued participation in demand flexibility initiatives that require significant user intervention, and the level of incentive required to interest consumers more broadly might make such a scheme unviable.

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?

Improving energy performance of residential buildings is a critical task to help ease the NSW energy system transition, meaning there is a compelling rationale for government to act. There are a number of ways that governments can support improving energy performance, including:

- Using the existing Energy Security Safeguard schemes to accelerate deployment of simple technology retrofits
- Creating a one-stop-shop for householders to access information, finance and advice about upgrading the energy performance of their housing
- Investing directly in upgrading public and community housing, and utilizing government procurement levers in this act to build norms for quality and safety of upgrades
- Directing government-owned distribution network service providers to make better use of energy efficiency frameworks within the NEM regulatory system, and set targets for those businesses to improve residential energy performance

- Ensuring foundational frameworks are in place, particularly residential energy performance ratings, mandatory disclosure of ratings at point of sale or lease, and minimum energy performance standards for rental dwellings.

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

- What are the benefits, risks and other considerations in setting targets for consumer energy resources?**
- Which technologies may benefit from targets?**
- How should the government set and monitor the achievement of targets?**

These types of targets are not particularly helpful to the improvement of residential energy performance. Instead, the NSW Government should consider overall targets for the performance of households, such as one or more of:

- Reduction of average household energy consumption. (Noting that this will be a complex metric as the electrification of other services – particularly transport – builds pace)
- Improvement of the overall rating of the housing stock – for example, targeting all NSW housing to achieve at least 4 stars on the NatHERS scale by 2040
- Reduction in the average absolute value of NSW residential energy bills
- Reduction in the absolute emissions from the NSW residential sector.

Technology-specific targets risks creating a disorderly rush to deploy a particular technology, which could give rise to risks to quality and safety of technology installation.

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

- 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?**

The ESS scheme is valuable and proven way to roll out upgrades to households. However, the schemes are ill-suited to creating deeper retrofits in households (such as invasive retrofits) that will create the greatest benefits for households and the energy system. The ESS should continue in its current form, but consider adding a range of other activities for individual technology types (such as electrification activities)

- What other types of initiatives should the NSW government use to provide incentives for uptake of consumer energy resources (such as government programs for specific types of households or specific technologies, loan programs etc)?**

NSW will need to implement a range of programs to improve residential energy performance, ranging from direct intervention for social housing, to highly incentivized retrofits for landlords of low income renters, to smaller incentives and low cost finance for households of greater means. There is no one size fits all program, and the suite of programs should deal with all household types.

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

In an era of solar production outstripping demand, minimum solar export tariffs have no place. Should a minimum export tariff be put in place, consumers with solar PV will be receiving a payment for generation at a time when the energy system is requiring other generators to pay to continue generating. This gap will therefore be met by other consumers – those who do not have solar – and is therefore highly inequitable, and provides a highly distortionary market signal.

The greatest value of solar PV to a consumer is in self-consumption, and government programs should be designed to encourage maximal self consumption. At the same time, higher export tariffs should be available to households that export power at times of grid need – such as in the evenings.

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

The NSW Government should consider the areas in which it has relevant policy levers, and other governments do not. In particular, imposition of mandatory disclosure of energy ratings and minimum energy performance standards for rentals is a key strategy to improve energy performance in residential buildings, and not an area in which national initiatives have a relevant policy lever.

7. 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)?

Information is an extremely important part of improving energy performance – such as information about what upgrades can occur, how they can be financed, and how a householder can begin them. Similarly, foundational information about residential energy performance is required through residential energy performance ratings.

However, information is a necessary but not sufficient enabler for household action. The conception of consumers as rational actors who, given the right information, will act to improve energy performance has not yielded results so far. For example, the simplest action that a consumer can take to reduce their energy bill is to check their bill and potentially change providers. However, many years of information campaigns, and significant effort to improve consumers' access to information in this topic have not yielded substantial results with reducing consumers' energy bills. In fact, the Victorian government has provided substantial cash incentives to consumers to simply **access** information that is available to them and will save them money if they take advantage of it. So, while access to information is important, it is not sufficient in itself to achieve the objectives of the strategy.

- 9. What are your views on implementing residential energy performance disclosure in NSW?**
- a. What are the key challenges?**
 - b. What, if any, transitional measures would be needed before disclosure of residential energy performance could be made mandatory?**
 - c. What complementary policies or initiatives would help households to improve the performance of homes they are living in, selling or leasing?**

As described earlier, residential energy performance disclosure is a critical enabler and must be implemented as soon as possible. A phased approach could be taken to implementation, once the national framework has been agreed, but mandatory disclosure should be in place by around 2027 at the latest. We understand there are several measures underway which could make implementation easier, such as the CSIRO RapidRate and MagicPlan tools. Sufficient time will be required to scale up the number of assessors, and NSW could begin planning for making the necessary training available as soon as possible.

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?**
- **Other topics or issues?**
- 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?**

The EEC notes that sources of information on residential energy performance are disparate, and work to create one-stop shops for residential energy performance upgrades could be a good way to help direct credible, useful information towards households.

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?**

The EEC does not have comments to make on this area currently, although we would note that community-level batteries can provide a better level of utilisation of residential PV solar, and share energy resources better and more efficiency

amongst a neighbourhood. Community-level batteries could make highly effective use of limited battery resources, as well as improving distribution network resilience.

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

See response to question 4.

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

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

As discussed earlier, each consumer group requires a targeted program approach. Direct investment in social housing upgrades, minimum rental standards to assist renters, assistance to strata bodies to help plan and finance upgrades, substantial financial assistance to low-income households, and targeted assistance to the general population will all be needed.

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?

Low-income households will require high levels of financial assistance to take up consumer energy resources, which will require substantial contributions from the NSW Government.

Other organisations can assist with delivery of upgrades – for example, the finance sector can help finance and package upgrades with some level of co-contribution from households, and community organisations can use their trusted credentials to extend the reach of programs to improve access.

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 homes upgrades across NSW?

The NSW Government should set a target of minimum energy performance standards for social housing by 2030 (such as all social housing achieving 5 stars on the NatHERS scale), and provide substantial funding to ensure that providers can achieve that goal. While the finance sector may be able to help providers access some financing, the non-commercial nature of social housing means that substantial investment on the part of Government will be required.

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?**

Minimum energy performance standards for rentals should be implemented as soon as possible. In the beginning, these standards should be features-based, such as requiring a house to have adequate ceiling insulation, an effective and efficient heating and/or cooling system (depending on climate), and effective window coverings to all windows.

Once the residential energy performance rating system and mandatory disclosure for homes at point of sale is in place and operating at scale, the NSW Government should consider implementing a performance-based minimum renting standard – such as 4 stars or above.

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?**

Strata buildings are likely to face unique challenges as the clean energy transition proceeds – particularly those that operate central services in constrained locations. While apartment buildings are a relatively small proportion of the overall housing stock, they will nevertheless need to be addressed before 2050. The NSW Government should consider providing assistance to owners' corporations to prepare a transition plan that they can implement at the optimal time – such as when assets come to the end of life – and potentially consider making access to finance and/or Environmental Upgrade Agreement models available to assist strata bodies to implement necessary upgrades.

18. What are your views on IPART's draft recommendations [on embedded networks]?

19. Should retailers be required to inform customers of a better offer by other mechanisms than the bill?

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

The EEC has no comment at this time.

21. What are the priorities for coordinating demand with supply?

Some examples could include:

- o expansion of the PDRS, for example to include EV chargers**
- o requiring retailers to offer tariffs or incentives to households to encourage demand response, battery discharge etc**
- o requiring retailers to offer more controlled load services .e.g. for air-conditioning or other voluntary load shedding**

- o introducing common guidelines for existing retailer-led peak demand reduction programs to increase visibility and consumer protections***
- o strengthening small customer protections for control of consumer energy resources, to allow expansion of the WDRM to small customers***
- o strengthening incentives for distribution networks to increase uptake of the DMIS.***

From the householder point of view, the most successful programs are those that require minimal intervention from the household. For example, the Queensland PeakSmart initiative provides discounts on air conditioners that are enabled with a demand response enabled device – meaning that a consumer receives an incentive to install an air conditioner that will support grid security and stability, that requires no ongoing intervention from the householders. Conversely, programs that rely on ongoing engagement from householders are less likely to be successful, outside a relatively small group of highly engaged households.

This means that schemes like the PDRS and ESS, that provide upfront incentives to consumers, are likely to be successful ways to encourage households to help coordinate between energy supply and demand.

Electrification of transport is likely to provide a challenge, as the dominant mode of EV charging is likely to be overnight at home, rather than by using destination chargers during the day. This means that there is an important piece of work to be done to reduce the load placed by EV charging on the grid, such as incentivising the uptake of chargers that minimise unnecessary peak power draw. The average Australian commutes around 35 kilometres to work and back each day, meaning a typical EV would use around 6 kWh per day. A trickle charge is able to very satisfactorily meet that requirement, while placing low demands on the grid. Incentivising the use of chargers that can automatically compute and implement the lowest required instantaneous power draw could be an effective way of helping coordinate supply and demand, reducing infrastructure requirements.

22. What household demand response programs are already occurring?

- o How effective are they?***
- a. Would retailers or DRSPs be comfortable sharing data confidentially on their programs, including their uptake, capacity and effectiveness?***
- b. What are the barriers to increasing demand response from households?***
- c. How can these be overcome?***

The EEC has no comment at this time.

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?***

Programs that provide customers an incentive for choosing efficient appliances, or demand-response capable appliances, or for investing in household energy performance upgrades, should focus on an up-front incentive that focuses

attention at the time of decision making, and locks in high performance for years to come. Programs that demand ongoing engagement from the consumer are less likely to be successful at large scale.

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?

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?

26. What common data framework should NSW use?

a. Who should be required to comply with a common data framework and how?

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?

The EEC has no comment on these questions at this time.

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

The EEC strongly advocates for a laser focus on programs to assure the quality and safety of energy performance products and services, especially where those products and services result from a government incentive. Appropriate measures include:

- Robust accreditation procedures for participants
- Access for consumers to independent advice and complaint resolution procedures
- Quality and safety standards for products installed as part of government incentives
- Orderly, predictable government scheme parameters to avoid boom-and-bust cycles.

Programs and interventions designed with sustainability and longevity in mind are likely to build consumer confidence, as it gives participants an incentive to invest for the long-haul.

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

The EEC has no comment at this time.

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?

Heat pump hot water systems are in urgent need of a GEMS labelling and MEPS determination, along with a standardised method of comparison of performance in several performance zones. Broadly, the EEC supports harmonisation with

ambitious international energy performance standards as far as possible, to ensure Australians have access to the most efficient technology available on the world market. As the GEMS framework is collaborative, the NSW Government can play a productive role in helping to resource accelerated rulemaking under the GEMS program, and advocating for a more rapid and ambitious program of minimum energy performance standards.

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?

Improvements in energy performance in existing buildings typically requires retrofit of technologies, which can create safety concerns. The EEC strongly recommends that government incentives require proof of competency and safe work. The EEC has spent some time developing a certification for professional insulation installers, which can help de-risk this technology in government schemes. The EEC strongly recommends that similar certifications are required for any retrofit technology that gives rise to safety risks.

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

Government should fully embrace the levers available through government procurement – the firm demand created through government procurement can help create expectations and norms in industry that can help lift the standard across the board. For example, a program to implement retrofits in public housing, procured through government, could specify minimum experience, qualification or quality standards, which can then help build industry capability and culture to raise the standard in all instances.

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

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

- o Products?**
- o Installation?**

35. Do existing bodies have the right enforcement powers?

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

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

The EEC has no comment on these questions at this time.