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

Submission in response to: Consumer Energy Strategy: households

Thank you for the opportunity to provide feedback on the consultation questions.

The Committee for Sydney is the city's peak advocacy and urban policy think tank. We work with our 160+ member organisations to produce research and policy recommendations on key agendas for the metropolitan region. Our members include energy companies, utilities, transport and infrastructure constructors and managers, developers and designers of all forms of buildings, local governments, universities, and professional services that support all sectors to decarbonise.

We have a significant body of work related to decarbonisation and climate risk agendas for Greater Sydney, with the most relevant being **Decarbonising Sydney: The role of transport, buildings & grid infrastructure on Sydney's path to net zero**

In August 2022, the Committee for Sydney released [Decarbonising Sydney, a report](#) which details the possible pathways for Sydney to achieve net zero by 2030 and 2050. We developed the report in partnership with Ausgrid, Endeavour Energy, Dexu Property Group, McKinsey & Company, the Greater Cities Commission, NSW Treasury (OECC) and the NSW Department of Planning and Environment. The report was also peer reviewed by more than 30 organisations, including universities, businesses, not-for profits, and local government representatives.

One of the initial findings of the report was that despite NSW's climate policies leading the nation, Greater Sydney is not on track to do its fair share in meeting NSW's 2030 or 2050 net zero targets. Under current policy settings Greater Sydney's emissions will fall by ~43% by 2030, and ~80% by 2050. We therefore modelled an accelerated transition scenario that shows a pathway through a 50% reduction by 2030 and net zero by 2050.



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The findings of the report clearly identify the role of community energy resources (CER) in enabling an equitable and cost-effective energy transition with the right moves by Government and Industry, including clear government policy, leadership, and incentives.

For Sydney households in the bottom quintile in terms of income, energy costs are estimated to account for ~20% of their disposable income. If these households adopted technologies such as rooftop solar, EVs, batteries and electric appliances, their energy costs could decrease to ~5% of their disposable income (all else being equal). This compares to the highest quintile where energy costs are only ~3% of disposable income and where savings could reduce this to ~1%.

At a city scale, the most significant opportunities for reducing energy costs for households and accelerating decarbonisation are:

- A. Enabling growth and more effective use of existing distributed energy resources (such as rooftop solar, heat pump hot water, and battery storage), and setting battery storage targets at a community scale to enhance equity of access
- B. Enabling equitable access to electric vehicle charging, increasing uptake of electric vehicles and their multi-purpose batteries.
- C. Reforming energy infrastructure regulation to maximise the use of distributed energy at the local scale, from smart meters and innovative tariffs, through to demand response and emerging distributor system operator models.

Subsequent pages provide detailed answers to the consultation questions. Please don't hesitate to reach out to discuss our submission in more detail to inform the NSW DCCEEW's work to create a Consumer Energy Resources strategy.

Yours sincerely,



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1. Are these the right objectives? Is anything missing?

There is no mention of a scale other than household in the objectives, nor the opportunity to engage commercial and industrial operators (C&I) in meeting these objectives. We know that industrial and warehouse rooftops across Sydney are filling up with rooftop solar, and there is potential to harness this energy generation for consumer benefit, particularly where generation from industrial areas can meet demand in residential areas that do not have access to CER.

It would enhance the strategy to have recognition at the outset that community, neighbourhood, precinct etc are other scales beyond the 'household' at which these objectives can be met.

You may also want to consider an objective that speaks to finding a balance between the different actors and stakeholders that ensures each actor benefits sufficiently to want to participate and not block or change the status quo.

2. Are these the right principles?

The principles you have identified are an excellent start. We recommend considering three additional principles:

- **Future ready:** The rate of change is so fast that working with current technologies may create redundant solutions if future possibilities are not considered. The rapid decrease in the price of batteries and electric vehicles, and the rapid advancement in Vehicle to Grid technologies, are two examples of leaps forward in price and technology.
- **Enable community resilience:** There are emerging benefits from battery storage and micro-grids that can enhance household and community ability to manage disruption to energy supply. Consideration of the social benefits and Government expenditure savings associated with supporting community resilience to disruption would strengthen this strategy.
- **increased demand will happen, -doing nothing is not an option:** In an Accelerated Net Zero Transition, total electricity demand is forecast to grow ~10% by 2030 (a 35TWh increase), and ~68% by 2050 (a 53TWh increase). Total demand will increase due to: population growth; use of electricity for industrial processes; electrification of vehicles and buildings and appliances (especially heating); and will be offset by rooftop solar, battery storage and energy efficiency (see Chart 1 below).

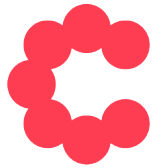
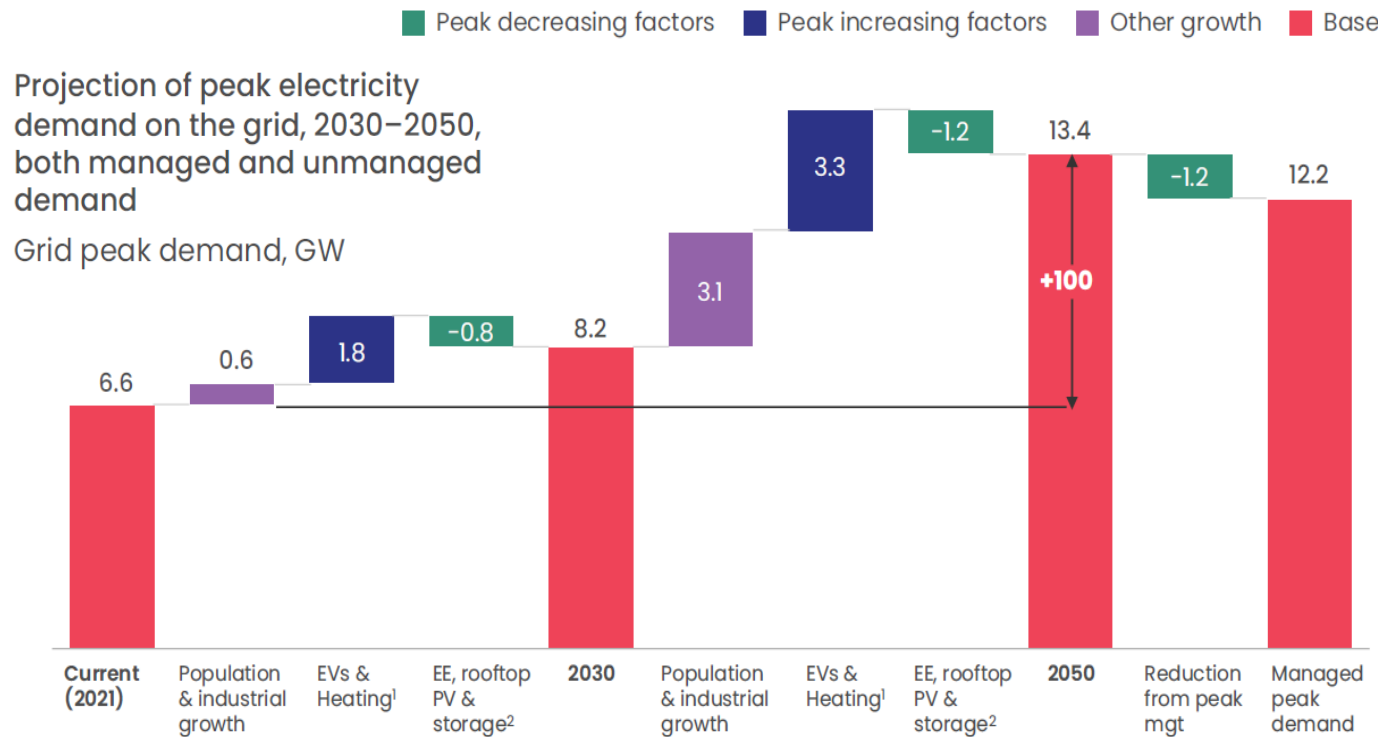


Chart 1:



1. EVs include electric passenger vehicles, Light commercial vehicles, trucks, buses, coaches. Heating include electric water heating and electric space heating; 2. EE: energy efficiency from building

Source: Ausgrid, Endeavour, McKinsey Net-zero Trajectory, McKinsey Center for Future Mobility, McKinsey Power Solutions

3/4/5. Encouraging Deployment: What are the key barriers?

Our research revealed three broad types of consumers, with a range of incomes in each group, and therefore differing levels of ability to afford upfront costs of low emission technologies :

- **Hesitants** (22%) are aware of climate change, but doubt that individual action can make a difference and many also believe that proposed solutions might create perverse impact on the climate. They are waiting for government to lead the way with sensible policies.
- **Pragmatists** (around half of Sydney's residents) focus on affordable solutions that make their lives easier. They would consider solar panels and electric heating and water but have not gone looking for them. If they have, they must be convinced clean solutions match the convenience they're used to. Clear and transparent information is key to nudging positive change from this cohort.
- **Stewards** (26%) are far more motivated to adopt sustainable technologies. They seek out new solutions and information but expect government and businesses to support those options.

Despite their differences, these consumers archetypes all expect government and businesses to demonstrate bold action and help make it easy for them to change.

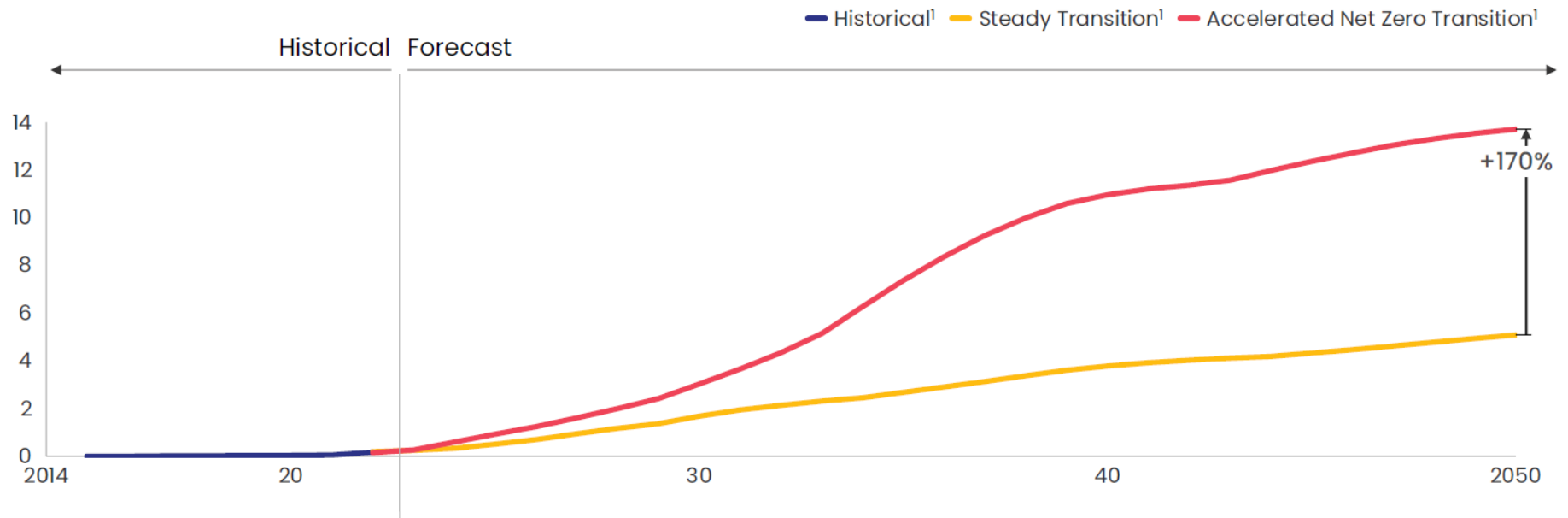
6. Targets to accelerate deployment:

Yes the Government should set specific targets as this will create certainty for industry and distributors of what they should be planning for and accelerate the market for incentives/ pricing for energy sharing.

In the Accelerated Net Zero Transition scenario, Sydney accelerates its adoption of both private and community batteries. To date, adoption of residential storage has lagged far behind the adoption of rooftop solar: in 2020 less than 4000 or ~0.2% of homes had batteries, with a total capacity of <0.1 GWh. For an Accelerated Net Zero Transition, that needs to rise to ~2.7 GWh, which is equal to ~10% or ~180,000 dwellings by 2030. By 2050, this will need to accelerate further to ~12.3 GWh (see Chart 2 below).

Chart 2:

Storage capacity of small-scale battery systems in Greater Sydney, 2007–2021, 2022F–50F installed storage capacity, GWh



¹ 2014–2021 historical installs from Clean Energy Regulator and forecast storage capacity from AEMO ISP 2021 Steady Progress (for Steady Transition) and Step Change (for Accelerated Net Zero) scenarios. Assumes regional allocation as per AEMO scenarios, and average system size of 13.5kWh in 2021, growing by 1% p.a.

Source: AEMO ISP 2021 Assumptions, Clean Energy Regulator

7. Should the Govt provide incentives? What kind of incentives and why?

Our research suggests the only way to meet the CER objectives outlined above is for Government to offer incentives for electric hot water, batteries and other smart CER, leading to greater installation, more aggregation services, additional installations, demand response and grid stability benefits.

Our customer research suggests that there are five broad beliefs that must be addressed if policy makers are to secure behaviour change at the scale needed in the *Accelerated Net Zero Transition*:

- A. **Make it easy.** This belief typifies the pragmatic view. It suggests that electric vehicles and appliances will not be chosen unless they replicate (or improve) the way the existing technology does the job. Changing technology is never easy, as people either like things as they are, or don't like the trouble of change, or both.
- B. **Reduce the price.** To date, electric vehicles, appliances and home energy systems have been more expensive upfront than their conventional equivalents. Except for rooftop solar, consumers have balked at the upfront cost. While the premium is narrowing quickly in areas like passenger transport (detailed in Section 2), many perceive the price gap to be prohibitive.
- C. **Provide trustworthy information.** Although awareness about climate change is near universal, many are overwhelmed by the information they receive, or have simply lost trust in it. Most people need someone they trust to recommend an option. The needle is shifting, but more evidence from trusted sources is required.
- D. **Lead the way.** Consumers expect government and business to set up low-emission options, place limitations on emissions, and lead by example. They want to see electric vehicles for corporate and government fleets, and rooftop solar, batteries and electrical appliances in public buildings, including offices, hospitals and schools.
- E. **Show the impact.** Once consumers have accepted there is a need to change, they want evidence their efforts are making a difference. This may include comparing household energy bills to past usage and neighbours, and demonstrating the impact of each household appliance on emissions. Tracking the emission 'footprint' of lifestyle choices can drive better choices.

These attitudes point to the initiatives that will be needed to accelerate the adoption of electric vehicles, appliances and distributed energy resources, like rooftop solar and batteries, across Sydney. As always, information, incentives and infrastructure are needed to support behaviour change. Alongside this, regulation will be needed for 2030 targets to be met.

Incentives should include:

- i. **Point of sale rebates** that make electric hot water cheaper than its gas equivalents would support the installation of the up to 2.7GWhs of battery storage needed through to 2030
- ii. Design **point-of-sale incentive** for new electric appliances supported by a consumer information campaign, and education campaigns
- iii. **Incentives for installers and retailers** to accelerate gas-to electric conversions
- iv. Introduce **incentives and public procurement rules** to encourage electrification of public sector buildings including social housing and commercial by 2035
- v. Regulation/ **dis-incentives that stops strata bodies from being able to prevent solar** installations under reasonable circumstances.
- vi. Targeted incentives to reduce costs for low-income families to retrofit their homes

8. Relative importance of access to information vs other barriers?

See Question 7

9. Residential energy performance disclosure.

Yes. The NSW Government should mandate disclosure of energy performance of residential homes and apartments at point of sale (from 2025). Stronger information, subsidies and regulation are needed to persuade consumers who are reluctant to change from gas to electricity despite long-term cost savings. Consumers interviewed for our Decarbonising Sydney research stated their preference for gas cooking, instantaneous hot water, and gas fire heating, as they reportedly provide a 'nicer' experience and are also 'cheaper'. In fact, heat pump hot water systems and other electric appliances will save money for consumers over their lifetime use and are healthier to use.

A ratings system, similar to the Energy Star rating for appliances, could help residents factor in energy efficiency and gas use into their purchase choices. This is already in practice in other countries, for example, the EU requires an energy performance certificate for any new building, for existing ones that are offered for sale or rent (including renewals), and for all public buildings.

There is a clear need to introduce an 'energy star rating' for homes to disclose at sale and rental to accelerate residential switching combined with a targeted awareness campaign.

11. Role of community batteries in alleviating network hosting capacity and improving household access to storage?

Key remaining barriers to the adoption of home batteries are cost and awareness. Of the Sydney residents interviewed, most were unaware of home battery technology and its benefits. Those who were aware consider it too expensive, with an upfront cost >\$10,000 and a long payback period (likely more than 10 years) depending on home energy use and configuration. Community batteries are an alternate to the household battery. Community batteries allow a much larger storage resource to be accessed by multiple households, which minimises the system cost, as the same service can be provided to the consumer at a lower cost.

12. Main issues or barriers with household access to CER?

Refer Question 3.

13. How to improve access?

Refer Question 7.

28. How can NSW Government build confidence?

Refer Question 7.

29. Key challenges?

The biggest challenge is equity. How can we deploy CER in a way that enables access to those facing the most significant cost of living challenges?

1. **The benefits of CER can't be realised without Smart meters.** To realise the full benefits of CER, smart meters and other software and system tools are needed to optimise rooftop solar and storage use. Rapidly increasing adoption to 100% by 2030 is a key step to make the most of CER investments.
2. **The transition to electrification will require upgrading home circuitry.** The NSW Government should lead on coordinating the **upgrade of home circuitry** in existing buildings to facilitate electrification and CER. This might look like a one stop shop for electrification, including the fuse box, induction circuitry, and change from 1 to 3 phase if needed.
3. **CER needs to happen at scale:** NSW's DNSPs are an existing mechanism that the NSW Government can leverage to deliver more volumes of CER and benefit from existing deep customer relationships and regulatory safeguards.
4. **Incentives need to target those for whom energy costs make up the largest parts of their household budgets.**