Submission No 45

INQUIRY INTO 2024 ANNUAL REPORT OF THE NET ZERO COMMISSION

Organisation: Solar Citizens

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SolarCitizens

A community voice for cleaner energy and transport

Solar Citizens

Parliament of New South Wales
Joint Standing Committee on Net Zero Future

Solar Citizens' Submission to the Net Zero Commission 2024 Annual Report

Solar Citizens is grateful to the Joint Standing Committee on Net Zero Future (the Committee) to consult on the Net Zero Commission's 2024 Annual Report which provides an initial assessment of progress towards the primary emissions targets and the climate change adaptation objective in NSW.

We understand that, following this report, the Net Zero Commission (the Commission) will publicise the first Draft Forward Work Program in March 2025, outlining their scope of work for the year ahead. We look forward to supporting this work through future consultations, stakeholder engagements, and opportunities to work in alignment towards achieving the State's Net Zero Goals.

About Solar Citizens

Solar Citizens is an independent, community-based organisation working to grow renewable energy and clean transport in Australia to bring down bills and reduce household emissions. Since our launch in 2013, we have gathered support from close to 200,000 Australians, many of whom are early adopters of Consumer Energy Resources (CER) such as solar PV, behind-the-meter (BTM) batteries and clean transport including electric vehicles (EVs).

In recent years we have seen increasing evidence of renewable energy and electric transport driving substantial cost-of-living benefits for households, and broader inflation-busting and productivity-enhancing benefits for the wider economy. However many Australian households continue to face barriers to accessing CER and remain reliant on expensive coal-fired power, petrol and gas. Urgent action is required from all levels of Government to ensure that as many people as possible can access the benefits of a cleaner, fairer, more affordable energy system.

Introduction

The Net Zero Commission's Annual Report (the Report) provides a useful overview of the NSW Government's progress towards achieving the 2035 and 2050 emissions reduction targets, and provides clarity on the level of ambition required from all areas of government to ensure these targets are met on time.

The following submission is primarily concerned with chapters 2.2: Electricity and energy sector and 2.7: Built environment sector and includes specific recommendations to the Commission in terms of the framing of issues, the level and consistency of detail provided throughout the Report, and some additional areas for policy attention that could be identified. While we recognise that the structure of the Report aligns with the departments of Government, this submission includes reflections relating to NSW Government as a whole with recommendations for greater cohesion and alignment between departments.

Achieving Net Zero on time will require coordinated, collaborative action from all areas of government with clear direction from the Commission. This will require a step-up from the current, more siloed approach of each department working to address the relevant issues falling under their portfolio.

For example, the NSW Department of Climate Change, Energy, the Environment and Water (DCCEEW) has committed to spend millions of dollars on addressing the climate and energy crisis by future-proofing existing homes through the implementation of fifty actions as part of the NSW Consumer Energy Strategy.

At the same time, the Planning Department is working to address the housing crisis and plans to deliver 377,000 new homes by mid-2029 under the National Housing Accord and 185,800 homes by 2040 under the Transport Oriented Development (TOD) Program. Many of these new homes will be connected to the gas network, and only a small percentage will be constructed with rooftop solar, battery storage and EV charging[1].

Upgrading existing homes with CER while simultaneously building new homes that will soon require the same upgrades (at the cost to the consumer and potentially the government if rebates are provided) represents a dissymmetry between the two programs where one is undermining the progress of the other due to the lack of a shared goal. This misalignment should be identified in the Report as a risk to transition as well as an inefficient use of resources.

[1] A large portion of these new homes will be units within apartment buildings which typically have lower CER installation rates as well as different building and energy efficiency requirements to standalone homes.

All government programs - regardless of the department responsible for shaping the policy and delivering the program - must address the climate and energy crisis and provide the *maximum* possible contribution towards the state meeting the state's Net Zero and emissions reduction targets on time.

2.2 Electricity and energy sector

The role of Consumer Energy Resources

This chapter is largely focused on the speed at which large-scale renewables are being rolled out to replace fossil fuels. Consumer Energy Resources are brought into the discussion in the form of a few short sentences throughout the chapter and two paragraphs at the end of the chapter. This level of detail is inadequate considering the significant role that CER is currently playing, and will continue to play in NSW's clean energy transition.

In the past year, rooftop solar provided 12.2% of the NSW' total electricity generation, while utility-scale solar contributed 10.1%[2]. This section of the Report must address the important role of both large-scale and small-scale renewable energy generation and storage in decarbonising the electricity grid.

On Page 18, we recommend that the NSW Consumer Energy Strategy, Peak Demand Reduction Scheme (PDRS) and Small Scale Renewable Energy Scheme (SRES) are identified as being conducive to further emissions reductions - in addition to the NSW Electricity Infrastructure Roadmap and the Australian Government's Capacity Investment Scheme as noted in the Report.

On page 25, CER is described as *"demand-side efficient and smart appliances, grid-connected technologies such as heat pump hot water, pool pumps, home batteries, and electric vehicles (EVs), at household, commercial and industrial levels."* We observe that both solar PV technology and bidirectional charging/ vehicle-to-grid technology are missing from this list and recommend that they are added in to provide a more complete definition of CER.

Benefits and risks to CER rollout

A further recommendation for this section is that greater merit should be placed on the cost saving potential of CER. Rooftop solar is the cheapest form of electricity available in Australia and is driving down energy prices in all states however this has not been addressed by the Report, although the cost savings of coordinated batteries have. It should also be mentioned that as well as providing cheap energy to the electricity grid, rooftop solar provides significant savings to consumers in the form of reduced electricity bills.

[2] Open Electricity. See: https://explore.openelectricity.org.au/energy/nsw1

The second paragraph on page 25 accurately notes that a benefit of CER is to *"reduce demand during evening peaks and help avoid investment in additional peak generation and transmission capacity."* Also that "*effective coordination of consumer batteries could save up to $4.1 billion in electricity infrastructure investment nationally by 2050"*. Here, we recommend that the Report highlights the potential cost savings specific to NSW's electricity infrastructure, the potential impact that coordinated batteries will have on the speed of transition, and what action is required from the NSW Government to realise these benefits in full (e.g, interim targets for household battery uptake, improvements to the coordination capability of existing batteries, etc.).

The Report should mention that a further benefit of CER is that the rollout is not subjected to the same issues as large-scale renewables in terms of gaining community support. The Report should address that there are however a different set of barriers that may impact the continued rollout of CER. These include: the lack of government incentives to install CER on rental properties; the higher costs associated with electrifying and decarbonising apartments and strata properties; and the various infrastructural challenges presented by older or heritage-listed buildings.

CER as an alternative to coal-fired power

On page 18, the risks of further extending the Eraring power station past 2027 should be addressed in relation to meeting Net Zero targets on time. The report should provide a firm recommendation that Eraring power station must close no later than 2027, and should include both large-scale and small-scale renewable energy generation and storage targets required to enable this to happen. Currently, the Report lists utility-scale batteries and gas-peaking generators as alternatives to coal-fired power. Coordinated household batteries should be listed as part of this mix.

The Australian Energy Market Operator (AEMO) 2024 Integrated System Plan (ISP) [3] specifically recommends that nationally, 8GW of household batteries is needed by 2030 to ensure a low-cost, timely transition. The 2024 ISP report should be referenced and presented alongside NSW-specific targets to meet the storage capacity required to close Eraring on time.

Beyond this Report, we recommend that the Net Zero Commission makes the timely closure of Eraring a key priority area within the Draft Forward Work Plan. Noting that DCCEEW has set a target of one million solar and battery households by 2035, we recommend that progress towards these targets be simultaneously reviewed as part of this body of work. In the first instance, a key recommendation should be that DCCEEW must set interim targets towards achieving one million homes with solar and batteries by 2035 to align with Eraring's planned closure date in 2027 and the 2030 Net Zero target.

2.7 Built environment sector

[3] Integrated System Plan (2024) AEMO

Housing targets

We acknowledge that this section of the Report pays appropriate consideration to widely held concerns around the lack of action from the Planning Department in preventing unnecessary reliance on fossil fuels including gas in new homes. We are supportive of the recommendation that federal and state governments should develop strategies for the complete, efficient and equitable electrification of all buildings. We are also supportive of the Commission identifying the lack of a gas ban in NSW as an area for policy attention to be included in the forward work program.

We note however that this section of the Report fails to mention specific programs such as the Transport Oriented Development (TOD) Program and the push for 377,000 diverse and well-located homes by mid-2029 under the National Housing Accord Target. Combined, these two programs will lead to the creation of 562,800 new homes[4], a 17% increase from the number of dwellings in NSW recorded in the 2021 census[5].

Many of these homes will be units within newly built strata-titled properties. Under current building codes in NSW there is no requirement for apartment buildings to be constructed with on-site renewable energy generation and storage, nor for them to provide EV charging infrastructure for residents. Developers are also free to install gas hot water systems and gas cooktops and can work with an embedded network provider to install this infrastructure, thus creating additional barriers for future electrification retrofits and unnecessary costs to consumers. This push for new homes represents a significant risk to the state's progress towards Net Zero which should be acknowledged in this Report and quantified in terms of predicted annual emissions from the construction of 562,800 fossil-fuel-reliant homes. This analysis should also quantify the potential annual emissions reductions if all new homes were fully electric, with solar panels, battery storage and EV charging.

Benefits to homes and businesses

350 Australia's Electric Savings Report[6] finds that mandating all-electric new builds in NSW would deliver close to $6.6 billion in cost savings to residents and businesses over the next 40 years. The most efficient and cost-effective way to provide residents with the bill-saving and emissions-busting benefits of renewable energy and clean transport is at the time of construction.

[4] *It is unclear whether these two programs overlap in terms of housing targets, but if so, this number may be lower than our estimate.*
[5] NSW Census (2021) ABS
[6] Electric Savings Report (2025) 350 Australia

Retrofitting homes with CER once constructed can be costly to consumers and often requires financial support from governments in the form of rebates and loans. This is especially the case for strata-titled properties and apartments where electrification and efficiency upgrades can be a challenge due to issues with shared ownership of common property and energy infrastructure, as has been demonstrated in Solar Citizens' Electrify Wolli Creek Report[7].

While mandating access to renewable energy and clean transport in new builds, the Report should highlight the significant generation and storage potential of existing residential, commercial and industrial buildings. Research commissioned by Solar Citizens in 2024 [8] finds that there is 18GW of unrealised solar potential on all NSW houses and apartments, and a report from Nexa Advisory [9], published in the same year finds that there is an additional 7GW of untapped rooftop solar potential in NSW on Commercial and Industrial (C&I) buildings such as warehouses.

Installing solar with behind-the-meter battery storage on the state's existing residential, commercial and industrial rooftops would not only provide cost savings to households and businesses, but would reduce reliance on the build of large-scale renewables and transmission infrastructure - both of which have been identified in this report as at risk of delay. This concept is often referred to as Urban/ Urban-Industrial/ Local/ Distributed Renewable Energy Zones (UREZ/ UIREZ/ LREZ/ DREZ).

The report states that within this sector there is *"scope for significant policy action by governments and greater action by industry and households."* While this is true, we recommend that further context is provided in relation to the latter part of the statement. Whilst acknowledging that households have a responsibility to participate in the clean energy transition, there are many who wish to install solar, get off gas or charge their EV at home, but are not able to. This includes apartment and strata and residents, renters, lower-income households and social housing tenants.

NSW has the second-highest uptake of rooftop solar nationally, reaching over one million installations at the end of 2024[10], or one in three households - representing the significant investment made by consumers to adopt this technology. The fact that almost two-thirds of households do not have solar panels installed is consistent with research from the Grattan Institute[11] which estimates that ~60% of Australians are locked out of the clean energy transition due to barriers mentioned above (home ownership status, dwelling type, household income, etc.).

[7] Electrify Wolli Creek Report (2024) Solar Citizens
[8] Solar Potential Report (2024) Solar Citizens
[9] https://nexaadvisory.com.au/accelerating-ci-rooftop-solar-and-batteries-is-a-win-win-discussion-paper
[10] Small-scale installation postcode data (2025) Clean Energy Regulator
[11] Getting Off Gas Report (2023) Grattan Institute

In NSW, the proportion of homes that are either rental properties or apartments is higher than the national average (33% and 22%, respectively). An additional 16% are lower-income households (earning less than $650 per week)[12], and 4% are social housing properties. Of these cohorts, lack of action is unlikely to be a primary reason for low adoption rates of CER.

This section of the Report should highlight the barriers and challenges that prevent "*greater action by industry and households"* - and in doing so, make clear that this issue is more complex than suggested. The former part of this statement - *"significant policy action by government"* - will enable greater uptake by households that are currently locked out of the clean energy transition and is therefore the step that must come first.

Finally, there is an intersection between home energy requirements and climate change adaptation that has not been addressed in this section or in the Report as a whole. As the planet warms, the Australian continent will experience more intense and frequent extreme heat events and will be subject to increasingly unlivable temperatures and all homes will require efficient, electric heating and cooling systems.

The Victorian Government has recently mandated that from October 2025, homes coming under a new lease will require energy-efficient cooling and heating systems, as well as insulation and draught proofing. Compared to the rest of the country, NSW has the lowest percentage of homes with air conditioning at 60%[13], however no equivalent policy exists in NSW to ensure all homes are fitted with efficient heating and cooling systems. We recommend that a policy recommendation to address this is included as a recommendation in Chapter 3: Climate change adaptation.

Depending on the climate zone, heating and cooling can account for 20% to 50% of energy used in Australian homes[14]. In NSW, air conditioning will need to be installed in more than one million existing homes as well as in more than 500,000 new homes to be built in the next decade. This would equate to almost double the current number of air conditioning systems as there currently are in NSW[15]. A significant increase in energy will therefore be required to cool twice as many homes, for more hours in the day, and more days of the year.

The increased energy burden that comes with climate change adaptation measures should be acknowledged in the Report and identified as an additional potential risk to meeting Net Zero targets on time.

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[12] NSW Census (2021) ABS
[13] 'Air conditioning usage statistics 2024–2025', see: https://www.finder.com.au/energy/aircon-statistics
[14] 'Heating and cooling', see: https://www.energy.gov.au/households/heating-and-cooling
[15] *According to the 2021 census, there are 3,357,785 dwellings in NSW. 2,014,671 dwellings (60%) have air conditioning installed whereas 1,343,114 dwellings (40%) do not. This is in addition to the 562,800 new homes planned which equates to 1,905,914 additional air conditioning systems required.*

Conclusion

Solar Citizens looks forward to gaining a deeper understanding of the Commission's scope of work via the imminent release of the Draft Forward Work Program - which we understand will include work to be done in advance of making recommendations to the NSW Government in 2026.

Considering the various issues and risks to transition that have been identified in this report, there is a strong case for clear policy recommendations to be made as soon as possible to the NSW Government. The policy recommendations in the Report are backed by strong evidence in the form of reports, data and case studies from other jurisdictions, and the risk of delayed policy intervention is high. We therefore recommend that the Commission provide an initial set of high-priority policy recommendations to the NSW Government in the first half of 2025, including a recommendation to the Planning Minister to mandate all-electric new builds as soon as possible.

We are hopeful that the Commission will be successful in influencing policy outcomes for the better, and in enabling a more streamlined, coordinated approach from all governmental departments towards a shared goal of meeting emissions reductions targets on time as part of a broader national and global effort to mitigate the worst impacts of climate change.

Solar Citizens thanks the Joint Standing Committee for Net Zero Future for the opportunity to make a submission to this report, and look forward to further engagement and consultation opportunities in the near future.

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