

Submission  
No 232

## INQUIRY INTO DEVELOPMENT OF THE TRANSPORT ORIENTED DEVELOPMENT PROGRAM

**Organisation:** Solar Citizens  
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# SolarCitizens

A community voice for cleaner energy and transport

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Solar Citizens  
Level 3, Salesforce Tower, 180 George St  
Sydney, NSW, 2000, Australia  
[info@solarcitizens.org.au](mailto:info@solarcitizens.org.au)

Parliament of New South Wales  
Portfolio Committee No. 7 – Planning And Environment

## Transport Oriented Development Program

Solar Citizens is grateful to the Committee to consult on the proposed Transport Oriented Development Program.

### 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 over 180,000 Australians, including many who have adopted Consumer Energy Resources (CER) such as solar PV, behind-the-meter (BTM) batteries and clean transport including electric vehicles (EVs), to bring down their household's energy and fuel bills whilst doing their bit for the planet.

Our vision is for an Australia powered entirely by renewable energy, and we actively advocate for increased access to rooftop solar, household storage, efficient appliances and electric transport to ensure that as many people as possible can benefit from an energy system that is cleaner, fairer, and more affordable for all Australians.

In recent years we have seen increasing evidence of electrification and CER driving cost-of-living benefits for households, and broader inflation-busting and productivity-enhancing benefits for the wider economy.

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A: Level 3, Salesforce Tower, 180 George St, Sydney NSW 2000 E: [info@solarcitizens.org.au](mailto:info@solarcitizens.org.au) P: +61 458 503 058 ABN: 13 753 514 032

The Australian Federal and State Governments have a responsibility to ensure that these benefits are realised in full for as many people as possible, as quickly as possible - immediately and in the long term.

We draw the Committee's attention to the NSW Consumer Energy Strategy being driven by the Minister for Energy<sup>1</sup> and the National Consumer Energy Resources Roadmap currently under development by the Energy and Climate Change Ministerial Council.<sup>2</sup> The rollout of more affordable, accessible CER will not only provide much-needed energy bill relief to households, but it will also contribute significantly to the decarbonisation of the energy grid and help get our nation on track to reach Net Zero emissions by 2050.

## Overview

Solar Citizens understands the primary goal of the Transport Oriented Development Program (TODP) is to deliver high volumes of new housing stock over the next fifteen years, to address the current housing crisis in the Greater Sydney region. We recognise the potential of the program to deliver co-benefits including the creation of jobs, improvements to community spaces, and greater uptake of public and active transport due to the location of the new homes.

It appears that a number of organisations, peak bodies and local councils were briefed on the TODP at the end of 2023 / start of 2024, and that these groups were invited to make a submission to this policy. However the fact that this was not a public consultation raises red flags and we note the lack of involvement from environmental, sustainability or energy organisations in helping to inform this policy.

Increasingly, households are becoming not just consumers of energy, but producers - and hence all new and existing homes must be accurately recognised as an integral part of our energy system. Many decision makers are recognising this, and as a result many recent State and Federal policies have been well-informed by the advice of energy experts and advocacy organisations, something that has not been adequately addressed by the TODP consultation process.

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<sup>1</sup> See

<https://www.energy.nsw.gov.au/nsw-plans-and-progress/regulation-and-policy/nsw-consumer-energy-strategy>

<sup>2</sup> See

<https://www.energy.gov.au/energy-and-climate-change-ministerial-council/working-groups/consumer-energy-resources-working-group>

Solar Citizens would therefore like to take this opportunity to highlight the additional issues and challenges that need greater attention - including CER, energy efficiency, clean transport, and issues relating to energy equity and cost of living. In this submission, we will present a number of recommendations to address these challenges while taking into account the broader scope of issues identified in the TODP.

The development of 185,800 new homes under the TODP presents an opportunity to set the standard for what an energy efficient, resilient, healthy, affordable home looks like. The cost of retrofitting homes to new energy standards far outweighs the cost of building them to future proofed standards in the first place. The NSW Government must ensure that this program leads by example for others to follow - including developers as well as and other State and Federal Governments - both nationally and overseas.

**While it is true that we are in a housing and cost of living crisis, we are also in a climate crisis.** This must be seriously addressed by any new policy or program delivered by the NSW Government.

## Key Challenges

We would like to take this opportunity to highlight the following issues that are currently affecting many residents of NSW, that can and should be addressed by the TODP:

- **The impact of rising energy costs for consumers**, resulting in additional cost of living stress and in some cases, energy poverty which often has health implications.  
**Lower uptake of CER among renters, apartment dwellers and social housing residents** - compared to owner-occupiers living in houses who can more easily install solar and batteries / make electrification and energy efficiency upgrades to bring down their household's bills.
- **The negative health impacts and safety risks of gas appliances in homes.**
- **High costs, technical limitations and logistical challenges associated with retrofitting existing homes** to improve energy efficiency, increase climate resilience, and minimise emissions, and the lack of available housing on the market that has been retrofitted or built in accordance with these standards.
- **Urban dependency on fossil fuels for energy production**, and increasingly, on large-scale renewable energy and transmission in regional and rural areas that are often delayed and may lack the social licence required.

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- **Undersupply of electric vehicle charging infrastructure** to meet the current demand and encourage increased uptake.
- **Lower uptake of active transport** (nationally, in comparison with other OECD countries), and therefore greater dependence on typically higher emissions transport such as cars and buses.

In order to address these challenges, as well as those highlighted by the TODP, we recommend the following actions:

## Recommendations (Relating to Part 1 of the TODP)

We understand that the TODP has been informed by the new Sustainable Buildings SEPP, which mandates the reporting of a building's use of renewable energy, and recommends that developers consider how the building will: generate and store renewable energy; reduce peak demand for electricity including through the use of energy efficient technology; and meter and monitor energy consumption. Part 1 of the program involves the development of 47,800 new homes within 8 Accelerated Precincts, to be approved through the new State Significant Development (SSD) assessment pathway, to be approved with conditions.<sup>3</sup>

**Recommendation 1.1:** All SSDs approved under the TODP meet certain conditions - specifically that new homes are built in accordance with the National Construction Code (2025), new BASIX standards (2023), and the Apartment Design Guide.

Additionally, under the new SEPP, SSDs will need to provide a Net Zero statement demonstrating that the development must be able to operate without fossil fuels by 2035. We argue that this caveat, while good intentioned, may not necessarily lead to the desired outcome (that the home will be operating without fossil fuels by 2035).

A major reason for this is that there are often significant barriers to retrofitting - including high costs and technical challenges - which prevents people from electrifying and decarbonising their homes. The easiest and cost-effective way to ensure a home can operate without fossil fuels is to build it that way in the first place. New homes built under the TODP must not involve sunk costs such as gas appliances or inadequate electrical infrastructure. The cost of retrofitting should not

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<sup>3</sup> See

<https://www.planning.nsw.gov.au/sites/default/files/2023-06/guideline-for-drafting-conditions-state-significant-projects.pdf>

be left to future householders, but rather addressed in the most cost effective way - during initial construction.

**Recommendation 1.2:** All new homes built under Part 1 of the TODP should be required to be energy efficient, fully electrified (with no new gas), and are equipped with solar panels. Single-occupancy homes should be supplied with the necessary infrastructure and electrical capacity required to enable residents to install a BTM battery and EV charger should they wish to.

Further to this, we highlight that apartment buildings are typically more difficult and costly to retrofit compared to single-occupancy homes. This is due to complexities around strata governance, conflicts of interest with other residents, and issues around shared energy infrastructure and embedded networks.

Solar Citizens is currently working with the residents of Discovery Point in Wolli Creek - a high-rise development precinct south of Sydney that is home to over 3,500 people spread across 1,920 apartments. The residents are motivated to electrify their homes, get off gas and install solar, however they face significant barriers. For starters, they lack adequate suitable roof space to install solar panels - due to the fragile waterproof membrane covering each of the 13 buildings. One building has received quotes from a solar company and has found that the cost of running cabling down 15 storeys from the roof to the basement is uneconomical.

Furthermore, all apartments are connected to a centralised gas hot water system which prevents individual residences from making changes to their hot water system. All homes are fitted with a gas stovetop, and the residents have not been able to find an induction stovetop of the same dimensions, preventing them from making the switch. One building is connected to an embedded network, which prevents any kind of modification or change to electricity or gas supply. They have also found that the electrical capacity of the building may be inadequate to support the electrification of all apartments, and this also poses a challenge to installing EV chargers. Of course, one of the most significant barriers to electrification is the costs involved.

Through our work with the Wolli Creek community, we have seen first hand how difficult and costly it can be to electrify a home, especially in high-rise developments. To provide some context, the strata committee of one of the residential buildings in Wolli Creek has been investigating options for a rooftop solar system for over a year. This has been exacerbated by shading issues, high costs of cabling to reach the 15-storey-high rooftop, and infrastructural

challenges due to the rooftop's fragile waterproof membrane - all of which are due to the fact that these buildings were not designed with solar in mind.

The strata committee of this building has been quoted \$63,400 (after the STC discount) for a 28.6kw solar system. This is around **three times** as much as what it would cost for an installation on a standalone dwelling, and this system would only cover around 10% of the electricity needs of their common property areas and therefore the financial benefit of installing solar is much smaller, with almost no financial gains for individual residences.

It is paramount that the TODP seeks to deliver greater energy equity and increase access to CER for all households, rather than continuing to add to the problem. By future-proofing new homes and preparing residents for a Net Zero future, the TODP has the potential to deliver long-term socio-economic benefits while significantly reducing emissions and improving health outcomes for communities.

**Recommendation 1.3:** All apartment buildings approved under Part 1 of the TODP are equipped with rooftop solar to cover the electricity needs of the residents (if low or mid rise), or the common property areas as a minimum (if high-rise). In addition, all apartment buildings should have an adequate supply of EV chargers to meet the needs of the residents, as is outlined in the National Construction Code (2025). Apartments should be fully electrified with induction stoves, heat pump hot water systems, reverse cycle air conditioning, and efficient appliances with no gas.

Any new buildings with gas risk leaving residents with expensive stranded assets locking them into high energy bills. <sup>4</sup> The Institute for Energy Economics and Financial Analysis (IEEFA) recently published a report outlining the potential financial risks to consumers associated with the business-as-usual approach to gas in homes - highlighting that Jemena has publicly stated that their network may become stranded. According to the Australian Energy Market Operator (AEMO), NSW may not be able to keep up with projected levels of gas demand <sup>5</sup> and therefore this demand must be addressed through electrification of appliances and by reducing the number of gas connections in homes. Solar Citizens echoes IEEFA's recommendation that the NSW government should act urgently to remove gas from homes, and prevent new gas connections.

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<sup>4</sup> Gordon, J. (2024) Eight ways NSW could cut energy bills during the cost-of-living crisis, and beyond. Institute for Energy Economics and Financial Analysis. Available at:

<https://ieefa.org/resources/eight-ways-nsw-could-cut-energy-bills-during-cost-living-crisis-and-beyond>

<sup>5</sup> Australian Energy Market Operator (2024) Gas Statement of Opportunities report.

Further to this, the Grattan Institute has published a report highlighting the health risks associated with gas.<sup>6</sup> Specifically, gas stoves release nitrogen dioxide (NO<sub>2</sub>) and tiny particles called PM<sub>2.5</sub>. These particles irritate the lungs and can worsen asthma symptoms among sufferers, and potentially lead to the development of asthma in children, whose lungs are still developing. These pollutants are reported to leak even when the stove is off.

We also highlight that large apartment buildings can play a significant role in stabilising the grid and supporting the continued uptake of solar PV in the area, by shifting their electricity consumption away from peak hours. From November 2024, NSW's Peak Demand Reduction Scheme will incentivise households to purchase a battery and further rebate is offered when this battery is connected to a VPP. The NSW Government should lead by example by installing BTM batteries, connected to a VPP, wherever it is feasible to do so.

**Recommendation 1.4:** NSW Government leverages this opportunity to ensure that all apartment buildings in the 8 Accelerated Precincts are equipped to contribute to peak demand reduction through smart monitoring and control of appliances, as well as the installation of coordinated BTM batteries connected to a Virtual Power Plant (VPP).

We note here the distinction between BTM batteries and 'Community batteries', with the former having greater potential to reduce consumers' energy bills and therefore provide cost of living relief. Community batteries, while beneficial for peak demand shifting and thus stabilisation and firming of the grid, provide little economic benefit to consumers, and therefore it is Solar Citizens' contention that the rollout of BTM batteries be prioritised by the NSW Government as a first point of call, and that Community batteries are used only where BTM batteries are not appropriate for any reason.

The cost of retrofitting is also especially relevant to people living in affordable housing. These residents are likely to be impacted by cost of living pressures including increasingly unaffordable energy bills - which can often lead to energy poverty and negative health outcomes. It is crucial that urgent action is taken to bring these communities along in the clean energy transition, and the provision of homes that are energy efficient, fully electric, and powered by cheap, clean solar energy and storage will ensure that tenants are protected from rising energy bills for years to come. Affordable housing needs affordable energy too.

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<sup>6</sup> Wood, T., Reeve, A., and Suckling, E. (2023). Getting off gas: why, how, and who should pay? Grattan Institute. Available at: <https://grattan.edu.au/report/getting-off-gas/>



**Recommendation 1.5:** All new affordable homes built under Part 1 of the TODP must be energy efficient, equipped with rooftop solar and, wherever possible, BTM batteries.

## Recommendations (Relating to Part 2 of the TODP)

It is understood that the 138,000 new homes under Part 2 of the program will be assessed under the new State Environment Planning Policy (SEPP), following the usual process of Development Applications (DA) to be lodged with and assessed by councils. This housing stock will take shape as mid-rise apartment buildings, to be built in accordance with the Apartment Design Guide; the National Construction Code (2025); and new BASIX standards introduced in 2023.

We highlight that in low or mid-rise apartment buildings the ratio of rooftop surface area to number of apartments is more favourable to allow residents to benefit from solar PV. Notably, the 'SolShare' technology trademarked by Allume Energy enables solar energy to be shared by up to 16 apartments. Often the lack of available rooftop space compared to the number of apartments in high-rise developments presents a challenge when it comes to installing solar panels and distributing the benefits to all residents.

**Recommendation 2.1:** All new mid-rise apartment buildings developed under the TODP Part 2 are installed with enough rooftop solar to cover the electricity needs of the residents, equitably distributed via technology such as SolShare. These new homes should be built with EV charging equipment, as well as co-ordinated BTM batteries to reduce bills and help stabilise the grid during peak hours. All new mid-rise apartments should be energy efficient and fully electrified with no gas.

## Recommendations (Relating to Transport)

In addition to advocating for greater access to affordable CER, Solar Citizens advocates for cleaner transport options - supporting the rollout of electric vehicles and decarbonised public transport, as well in and around the 31 precincts, leading to increased road traffic and congestion due to more cars on the road, including from personal vehicle ownership as well as from commercial transport, buses, taxis and ride sharing. This increased congestion must be addressed within the TODP, with a key solution being improving uptake of active transport.

Each year, we run a survey to find out about the issues that matter most to our supporter base. In our most recent survey, 671 people reported that they owned a bicycle (ebike or non-electric).

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However, we found that 41% of bicycle owners “never or almost never” cycle for commuting/transport reasons, and an additional 19% commute by bicycle only “a few times a year”. When asked what would encourage them to cycle more often, 48% said ‘More protected bike lanes on busy roads’, reflecting a safety concern.

The TODP may provide greater access to public transport links for residents living in new developments, however there is an opportunity to improve transport connectivity for the wider community. The last mile or last kilometre is a term used to describe the difficulty in getting people from a transportation hub, especially railway stations, bus depots, and ferry berths, to their final destination. The costs of the last mile may include higher public transport costs, more time spent on public transport, higher emissions, and congestion due to more people opting to drive rather than take a bus or train, and greater transport inequity. By investing in improved active transport links in the 8 Accelerated Precincts and the additional 31 precincts identified in Part 2 of the program, the TODP could help to reduce the social, economic, and environmental costs of the last mile.

This is especially important for people who live further away from the CBD and other areas of high economic opportunity. Greater transport equity means that places of work, study, and recreation are accessible to all, regardless of postcode. Often, suburbs that are closer and/or have good transport links to the CBD are more highly desired and therefore more expensive to live in.

Increasingly unaffordable house prices drive out those on lower incomes towards the more affordable middle-ring and outer suburbs, which typically have longer commute times. This leads to greater transport inequity and the extra time spent travelling often means less time for recreational or health-promoting activities, increased childcare costs and/ or reduced economic opportunities due to impracticalities with commuting.

According to Transport NSW’s Cycleway Design Toolbox, there are five internationally recognised design principles for bicycle routes <sup>7</sup>. These are:

- Safe (well-lit to encourage cycling after dark; separated from the road and pavement to reduce risk of collisions with cars and pedestrians; suitable surface quality and path width with no obstructions);
- Connected (high quality, simple to navigate cycling routes between all their origins and destinations, and between different modes of transport across their journey)

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<sup>7</sup> Cycleway Design Toolbox (2020), Aurecon, SMM on behalf of Transport NSW

- Direct (routes should provide bicycle riders with the shortest and fastest way of travelling from place to place)
- Attractive (including trees and shade, quality public open space, welcoming destinations such as cafes and shops, and artworks)
- Comfortable (Routes should provide adequate width for the volume of users, enable minimal stopping and starting, avoid steep gradients, and limit interaction with high speed or high volume motorised traffic including noise and pollution where possible).

It is essential to incorporate requirements to deliver walking and cycling infrastructure as an integral part of project approvals. All developments, of all scales, must contribute to footpath and streetscape upgrades. The sphere of influence of a project on active transport infrastructure should depend on its scale – i.e. 10 metres to 1200 metres. The TODP must enable new transport infrastructure that supports the community, for example, Bicycle NSW recommends that new active transport routes be constructed alongside rail corridors, providing safer ways to commute, away from busy roads and areas of higher air pollution.

**Recommendation 3.1:** The TODP is delivered in conjunction with an in-depth review of available active transport routes - specifically bicycle and micro-mobility routes - currently available within each of the 39 precincts identified in Parts 1 & 2 of the TODP. Existing routes should be assessed according to the five design principles outlined in Transport NSW’s Cycleway Design Toolbox. The review should identify any gaps in the active transport networks and include recommendations for additional bicycle lanes to be constructed. We recommend that this assessment is done immediately, to prepare for implementation to be rolled out alongside the TODP.

**Recommendation 3.2:** Following this review, we recommend that funding is committed to both improve existing bicycle routes, and provide new routes, including the construction of new dedicated bicycle lanes built in accordance with the five design principles. This work should be completed over the next fifteen years, aligning with the timelines outlined in the TODP. We recommend that both improvements to existing routes and the construction of new active transport routes are undertaken at the same time as the construction of new housing to ensure disruption to the local community is minimised.

**Recommendation 3.3:** Secure, under-cover, free-to-use bicycle storage facilities to be provided at each of the 39 train and metro stations.

**Recommendation 3.4:** Active transport routes to be supported by the provision of affordable e-bike hire fleets, encouraging uptake of low-emissions transport and reducing time spent commuting.

**Recommendation 3.5:** The Parliament of New South Wales Portfolio Committee No. 7 – Planning And Environment should consult with independent active transport advocacy organisations including Bicycle NSW, Dutch Cycling Embassy, AusCycling and We Ride Australia. Active transport groups should be invited to provide feedback and recommendations on how the TODP can contribute to the increased uptake of active transport, and improve safety for this user-group.

The TODP has great potential to address issues of transport equity and energy equity, both of which may increase social licence within the communities affected. By adopting these recommendations as part of the program, the NSW Government could leverage this opportunity to deliver co-benefits to the current and future residents living within the 39 identified precincts, while reducing carbon emissions from road transport. Improving active transport routes will help to increase uptake in the near future as well as in the long term, and in turn will deliver improved health and wellbeing outcomes for community members.

## Conclusion

The new Sustainable Buildings SEPP states that “developing sustainable buildings is critical to achieving the NSW Government target of net zero emissions by 2050.” The 185,800 new homes delivered by the TODP will lead the way for both the private and public housing sector, and if done right, will deliver millions of dollars in bill savings for residents, while avoiding thousands of tonnes in Co2 emissions over the coming decades and contributing to the state’s progress to Net Zero. Now is the time for renewable energy to become the new normal and the NSW Government has a significant role to play in setting this standard.

Thank you again for the opportunity to participate in this submission process.

Heidi Lee Douglas, CEO, Solar Citizens

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