



AUSTRALIAN PARENTS FOR CLIMATE ACTION

Australian Parents for Climate Action

Submission to the NSW Department of Planning, Industry and Environment re:

Design and Place SEPP

28 April 2021

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Australian Parents for Climate Action represents over 14,000 parents, grandparents and carers from across Australia, including over 4,300 from NSW. We are Australia's leading organisation for parents advocating for a safe climate. Our supporters are from across the political spectrum, across Australian electorates, and from different socio-economic positions. We seek non-partisan responses to climate change and its impacts.

We are focused on pushing Australian governments and businesses to take urgent action to cut Australia's carbon emissions to net zero as quickly as possible. We encourage Australia to take a leadership role on the world stage, leading by example and calling for other nations to take the necessary action to protect our children's futures.

For more information, visit www.ap4ca.org

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Submission

As parents, the 14,000 supporters of Australian Parents for Climate Action, including 4,300 in NSW, look to our governments to make rational investments and policy decisions in the best interests of current and future generations. State Environmental Planning Policies (SEPPs) are key instruments that shape the environment we live in for decades to come.

The proposed Design and Place SEPP consolidates and incorporates a number of policy documents including the Building Sustainability Index (BASIX), which has regulated water and energy efficiency in NSW residential buildings since 2004. But its proposed “principles-based” approach that relies on non-prescriptive “guidance documents” provides little confidence that the NSW Government appreciates the magnitude of the threat and gravity of the risk we face from climate change. While there is acknowledgement (particularly in principles 4 and 5), DPIE’s Design and Place SEPP, Explanation of Intended Effects (EIE) falls well short of articulating the profound changes in mindset that are necessary to build the places that will meet the needs of tomorrow.

AP4CA is concerned that the NSW SEPP does not reflect the urgency of the climate crisis for the following reasons:

1. It does not explicitly require developments to be carbon-neutral or carbon-negative.
2. It does not explicitly phase out polluting systems like gas connections and greenhouse gas (GHG)-containing refrigerants.
3. It weakens building industry standards by prioritising “flexibility” over the need for sustainable developments that can withstand climate impacts.
4. It does not incorporate sustainable transport strategies despite SEPP’s potential in enabling better designed, low-traffic neighbourhoods.

Below we provide context and a series of recommendations for mandatory inclusions in the new SEPP.

1. The SEPP Must Not Allow Projects That Increase Net GHG Emissions

The consumption of fossil fuels (coal, oil and gas) is the principal source of anthropogenic greenhouse gas (GHG) emissions that are causing rapid increases in average global temperatures (a trend referred to as global heating). In turn, that heating is causing climate change. Average global temperatures have already risen more than 1°C above pre-industrial levels, causing a substantial shift in climatic conditions, which is highly unfavourable to biodiversity, food and water security, human health and safety, and the longevity/value of many property assets and infrastructure.¹

Australia's overriding obligation under the Paris Climate Agreement is to hold "the increase in the global average temperature to well below 2°C... and [pursue] efforts to limit the temperature increase to 1.5°C."² According to the International Panel on Climate Change, net global anthropogenic CO₂ emissions must decline by about 45% from 2010 levels by 2030, and reach net zero around 2050, if we are to succeed.³

The NSW Government's [Net Zero Plan Stage 1: 2020-2030](#) currently aims to reduce emissions by 35% from 2005 levels by 2030 (an interim target that falls well short of the IPCC's 45% between 2010 and 2030 recommendation,⁴ let alone the 74% off 2005 "fair share" assessment of the Climate Targets Panel⁵), and reach net zero emissions by 2050.

Meeting the NSW's Government's 2050 target requires that by the mid-2040s the only activities that should be producing GHG emissions in NSW should be in the agricultural sector. *All* uses of fossil fuels will need to have been curtailed.⁶ **NSW's SEPP must require proponents and DPIE (if recommending projects for approval) to clearly articulate how proposed developments are compatible with the state's net zero target, noting that most projects being approved now will still be in use well beyond 2050.**

NSW needs to cut emissions quickly and aggressively if we are to shoulder our share of the global burden and avoid potentially catastrophic climate impacts for our children. As Figure 1 illustrates, the speed at which we reduce emissions is critical: winning slowly on climate is still

¹ NSW Department of Planning, Industry and Environment, '[Impacts of Climate Change](#)'.

² United Nations (2015), [Paris Agreement](#).

³ Intergovernmental Panel on Climate Change (2018), [Special Report: Global Warming of 1.5°C](#), Chapter 2, Executive Summary. IPCC modelling estimates that global net emissions must decline by 40-60% (interquartile range) and reach net zero by 2045-2055

⁴ The IPCC's recommendation of a 45% reduction implies that NSW must limit emissions to 79.0 Mt CO₂-e per annum by 2030 (which equates to a 50% reduction from 2005 levels). Based on NSW emissions data: 2005: 161.8 Mt CO₂-e 35% off: 105.2; 2010: 143.7 Mt CO₂-e 45% off: 79.0. Source: NSW Environment Protection Authority (2018), [Greenhouse Gas Emissions](#).

⁵ Climate Targets Panel (2021), [Australia's Paris Agreement Pathways](#)

⁶ Climate Action Tracker (2020), [Scaling up Climate Action: Australia](#).

losing. Emissions are cumulative: most of the anthropogenic GHGs released into the atmosphere since the start of the industrial revolution are still there, contributing to global heating. We do not have the technology to effectively remove GHGs from the atmosphere at the gigatonne scale required.⁷ We need to be avoiding the release of GHGs, rather than simply hoping to recapture them, recognising that *any delay in climate action only serves to make the task far more difficult for our children.*

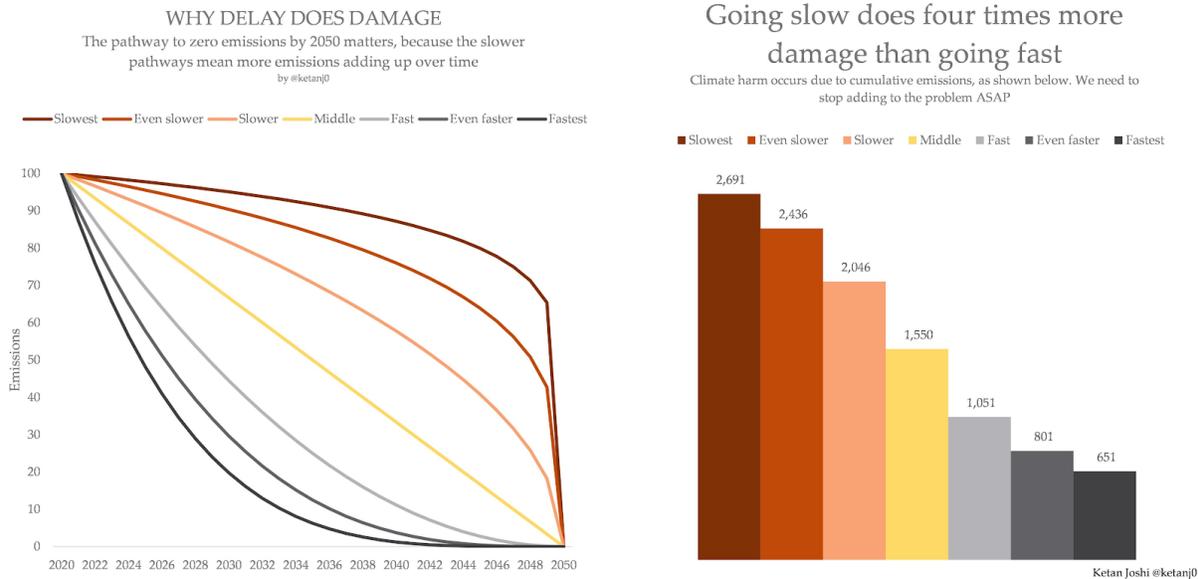


Figure 1: Rapid emissions reduction is critical now. The difference in cumulative emissions between steep cuts now and later is critical. Net zero by 2050 does not limit global temperature rise to 1.5 degrees unless there are steep cuts this decade.⁸

Scientists say the world can only afford about eight more years at the pre-COVID level of global greenhouse emissions if we are to avoid triggering irreversible natural tipping points such as ice sheet failure (and the resultant multi-metre sea level rise); total loss of coral reefs; release of methane currently trapped in northern hemisphere permafrost; and others that collectively would condemn us to runaway climate change.⁹ As former Chief Scientist Professor Penny Sackett and Australian National University Emeritus Professor Will Steffen have noted, Australia's share of the global emissions budget, on a per capita basis, is currently about *two more years at current emissions levels.*¹⁰

In light of this – and consistent with the Paris Agreement's ratchet clause (and the increasingly ambitious interim 2030 emissions reduction targets compared to 1990 levels being set by other jurisdictions: such as the UK's recent announcement of 68% and the European Union's 55%¹¹) –

⁷ Scientists Warning (2018), '[Direct Air Capture](#)'.

⁸ Joshi K (2021) '[Why Delay Does Damage](#)'.

⁹ Nature (2019), '[Climate tipping points - too risky to bet against](#)'.

¹⁰ Sydney Morning Herald (2019), '[Our carbon budget is all but spent, but who in Canberra is counting?](#)'

¹¹ BBC (2020), '[Climate change: EU leaders set 55% target for CO2 emissions cut](#)'.

AP4CA urges the NSW Government to increase its 2030 reduction target to bring it into lockstep with a 1.5°C pathway. Its capacity to do so will be significantly constrained should developments be approved that create multi-decadal increases in emissions.

Given the magnitude and urgency of the climate crisis, **emissions reduction must be a key issue in every government policy**. *Systemic decisions that increase GHG emissions at this point in history will in future be viewed as acts of inter-generational genocide, in direct opposition to the safe future of humanity and the people of NSW.*¹²

As such, the new SEPP must prohibit development that is not either demonstrably carbon neutral (including both operational, construction and embodied emissions) and favour developments that are carbon negative (i.e. projects that drawdown atmospheric greenhouse gases).

Recommendations

To ensure developments do not increase NSW's GHG emissions, AP4CA recommends:

1. **All projects approved under the new SEPP must be carbon neutral or carbon negative in operation.**
2. Planning authorities **should prioritise projects that directly achieve carbon neutrality** through highly energy-efficient designs, zero on-site use of fossil fuels, on-site renewable generation and contracted use of renewable electricity generation.
3. The NSW Government should **establish comprehensive, consistent methodologies for assessing GHG emissions over the entire lifecycle of a development**. Emissions both embodied (in materials) and associated with construction activities (e.g. use of diesel plant and vehicles) should be included in the assessment of a project's carbon neutrality.
4. Where carbon neutrality is achieved through the use of **commercial carbon credits**, project proponents must demonstrate that they are certified by an independent body to a quality level at least equivalent to the WWF **Gold Standard** (<https://www.goldstandard.org/>); contracted over the lifecycle of the development, and *equating to at least double the residual emissions of the project*. Ideally, offsets purchased would be in the form of a basket of 50% "avoidance" (which curtail future emissions); and 50% "drawdown" (which permanently remove and sequester atmospheric emissions). Doubling offsets and combining avoidance and drawdown types is the only way to ensure that offsets achieve genuine carbon neutrality.

¹² The Monitor (2019), ['The all too ugly truth: Climate change is generational genocide'](#).

5. AP4CA urges NSW to work with other states, territories and the Federal Government to review and standardise these lifecycle assessment (LCA) methodologies, which would in turn enable the development of emissions-factor databases that are free from industry bias and aligned with best science.
6. The SEPP should be closely aligned with the UN's principles of environmentally sustainable development, including frameworks covering climate change, biodiversity, disaster risk reduction and sustainable production & consumption.¹³

2. Polluting Substances Like Fossil Gas Must Be Designed Out of Buildings

In the 2000s, fossil gas was touted by some, including those seeking emissions reduction, as a transition fuel that would help wean our economies off fossil fuels until emissions-free alternatives became cost effective. But its days as a transition fuel are over, for three reasons:

1. As noted in the previous section, the time for perpetuating the use of fossil fuels is well and truly over.
2. Emissions-free substitutes for fossil fuels, particularly renewable electricity (with storage) have now been economically superior for several years.¹⁴
3. There is now compelling evidence that fossil gas is no better in terms of emissions intensity than coal (and could even be worse), as is explained below.

Fossil gas, called “natural gas” by its industry, is methane, a fossil fuel and potent greenhouse gas. Although it breaks down more rapidly in the atmosphere than carbon dioxide, a kilogram of methane has the warming potential of 86 kilograms of carbon dioxide (over a 20 year period).¹⁵ If carbon dioxide is a bullet, methane is a bomb, and the United Nations is calling for a halt to the expansion of gas extraction and a rapid phase out.¹⁶

Proponents of fossil gas point out that when it is burnt it produces about half the carbon dioxide emissions of coal when used to produce an equivalent unit of electricity. While that is true, what they do not typically mention is that from the gas well to the power plant or the cooktop, there are significant leaks of methane into the atmosphere, some of which involve deliberate venting.

¹³ UNESCO, [Sustainable Development](#)

¹⁴ ABC News (2019), [Fact check: Are renewables plus storage cheaper than coal and nuclear for new power generation?](#)

¹⁵ Nature (2020), [Global methane levels soar to record high](#) and Climate Council (2020), [Passing Gas: Why Renewables Are The Future](#)

¹⁶ New York Times (2021), [Halting the Vast Release of Methane Is Critical for Climate, U.N. Says](#)

Indeed, it only takes 3% of the gas to leak system-wide (the leaking gas is known as “fugitive emissions”) to make gas a dirtier fuel in terms of global warming than coal.¹⁷ Gas-based building appliances typically release methane prior to ignition of burners. Instantaneous gas hot water heaters were found to release nearly 1% uncombusted methane in a US-based study.¹⁸

Studies have found leakage rates into double digits at some facilities, but one of the problems is a lack of credible data: the gas industry has been left to self-measure its leaks, with minimal oversight from government regulators.¹⁹ Even the International Energy Agency, confronted with new satellite data tracking methane emissions, is now questioning industry claims.²⁰

Furthermore, at the end of a wellhead’s operational life, methane may continue to leak indefinitely unless it is effectively plugged and regularly inspected.²¹

The NSW Government currently proposes to reduce emissions by adding hydrogen to the gas network.²² But **even with green hydrogen, prolonging the state’s reliance on gas infrastructure is a dead-end strategy**. For both residential and commercial buildings, replacing fossil methane with renewable hydrogen does not make sense for three key reasons:

1. To be competitive with gas for in-building applications, hydrogen would need to be significantly cheaper than is predicted for the foreseeable future. And that’s with domestic gas prices having climbed in Australia since the emergence of the LNG export market. Even if hydrogen prices reach US\$1 per kg, it remains relatively non competitive with fossil gas, particularly in the absence of a carbon price.²³
2. Electric substitutes, generally with superior energy efficiency, can replace gas appliances in both homes and larger buildings. **There is no economic case for gas – let alone expensive hydrogen – to be used in buildings.**²⁴ As the emissions intensity of electricity generation continues to decrease with greater renewables penetration, neither fossil methane nor hydrogen can compete.

¹⁷ The Conversation (2018), '[The US natural gas industry is leaking way more methane than previously thought. Here's why that matters](#)'.

¹⁸ NRDC (2020), '[The methane math for gas tankless water heaters](#)'.

¹⁹ Washington Post (2019), '[A gas well blowout in Ohio emitted more methane in 20 days than all but three EU countries in a year](#).' and Australia Institute (2020), '["CSIRO" report misleads on fracking risks](#)'.

²⁰ IEA (2021), '[Methane Tracker 2021 – Analysis](#)'.

²¹ Australian Financial Review (2020), '[Gas companies are abandoning their wells, leaving them to leak climate-wrecking methane forever](#)'.

²² NSW Department of Planning, Industry and Environment (2020), '[Net Zero Plan Stage 1: 2020-2030](#)', p30.

²³ Renew Economy (2020), '[Renewable hydrogen to undercut gas on price, but not the answer for transport](#)'.

²⁴ Renew (2018), '[All-electric solar homes save thousands over gas: report](#)'.

3. Above about 10% concentration, hydrogen in the existing fossil methane transmission network (made of high tensile steel) will make the pipes brittle.²⁵ While the local distribution network has mostly been replaced with high-density polyethylene (HDPE) pipes, which are acceptable for hydrogen use, many appliances in buildings will need to be adapted or replaced to cope with high concentrations of hydrogen.²⁶

Instead, NSW's SEPP should expand on mandates introduced by the ACT Government that have already resulted in the first intentionally gas-network free suburbs.²⁷ The Green Building Council of Australia has introduced new rating tools that derate buildings that still use fossil gas.²⁸ A number of recent commercial building projects have announced net zero targets, requiring all energy consumed to be fossil free.²⁹ In such cases, fossil gas has been designed out in favour of all electric building systems and power contracted from renewable generators. This trend is expected to grow rapidly as more companies announce plans to achieve carbon neutrality. The Grattan Institute released a report in 2020 in which they called phasing out new gas connections a "no regrets option", having performed their analysis without including health costs due to air pollution.³⁰ (Governments will, however, need to ensure that electricity distribution networks are designed to accommodate the replacement of gas plant and appliances and the increasing penetration of electrified transportation).

The new SEPP is also an opportunity to **completely phase out high-global warming potential (GWP) refrigerants in NSW**. In 2018, the Australian Government began "phasing down" the import of hydrofluorocarbons (HFC), which is a GHG used in refrigeration and air-conditioning systems.³¹ The SEPP must accelerate the uptake of natural, low-GWP refrigerants such as ammonia or carbon dioxide and actively phase out the use of all refrigerants on the Kigali list including R32 (which is currently popular because its GWP is in the hundreds rather than the thousands, but its use still needs to be completely phased out).

²⁵ Hafsi Z, Mishra M, Elaoud S (2018), '[Hydrogen embrittlement of steel pipelines during transients](#)'.

²⁶ CleanTechnica (2020), '[Is Hydrogen The Best Option To Replace Natural Gas In The Home? Looking At The Numbers](#)'.

²⁷ ACT Government (2020), '[Gas no longer a requirement in Canberra suburbs](#)'.

²⁸ Green Building Council of Australia, '[Green Star Eliminating Natural Gas and Electrifying Buildings](#)'.

²⁹ The Conversation (2019), '[Australia's biggest property companies are making net-zero emissions pledges – now we can track them](#)'.

³⁰ Grattan Institute (2020), '[Flame out: the future of natural gas](#)'.

³¹ Department of Agriculture, Water and the Environment, '[HFC phase-down - Frequently asked questions](#)'.

Recommendations

To enable the phasing out of polluting substances like fossil gas and GHG-containing refrigerants, AP4CA recommends:

5. A **moratorium on all new “natural gas” connections**. Where a Development Approval is required for renovations, any in-scope gas appliances or plant must be replaced with electric alternatives.
6. All **HVAC systems and refrigerants must be compatible with the Kigali Amendment** to the Montreal Protocol.
7. New precincts and subdivisions must have electricity distribution sized and designed for fully electrified buildings and transportation (along with on-site renewables generation and storage).

3. The SEPP Must Strengthen Building Industry Standards To Ensure Developments Are Sustainable And Prepared For Climate Impacts

Australian Parents for Climate Action strongly oppose DPIE’s proposed weakening of building standards in favour of “flexibility”, “trade-offs”, and “moving away from prescriptive controls”. The proposed principles-based approach relies on non-binding guidance documents and introduces loopholes. Without clear, best practice targets, developers will be able to use alternative assessment methods, submit self-funded studies claiming to meet SEPP principles, and have more opportunities to legally appeal council decisions, as noted by the Total Environment Centre.³²

In this crucial decade, where by 2030 we need to halve greenhouse emissions globally in order to have *any* chance (and it is *only a chance*) of maintaining a safe climate for our children, we must have SEPPs that strengthen the state’s sustainability requirements, including by expanding BASIX to cover embodied emissions of building materials.

AP4CA submits that **building industry professionals must receive appropriate training in sustainability and climate risks** to ensure we maintain and continue to progress best practices throughout the state. Architects and building engineers should receive training in environmental sustainability design principles, climate risk and emissions reduction.

³² Total Environment Centre (2021), ‘Design and Place SEPP - not a solution for our urban environment’.

Tradespeople should also receive appropriate training and accreditation. A February 2021 report by the Energy Efficiency Council and Australian Sustainable Built Environment Council partially pinned the failure of the 2009 Home Insulation Program on an assumption that *“insulation was an unskilled occupation, when in fact installers require basic skills and the often-overlooked insulation supervisors require substantial knowledge of products, building regulations and safety procedures”*.³³ AP4CA supports the report’s recommendation of training and accreditation programs for trades. These requirements would not only address safety concerns, but also improve the effectiveness of installed systems. For context, a 5% gap in ceiling insulation can reduce its performance by 50%.³⁴

Similarly, refrigerant management must be more carefully regulated, and appropriate training for all trades who work with refrigerants should be mandated. Ninety percent of the heating impact of HFCs occurs through leaks and at the end of life of the product. These products must be collected and converted into other chemicals at the end of their life.³⁵ In addition to this problem, if refrigerants are not installed properly, appliances may consume more energy to do the same work. According to the Australian Institute of Refrigeration, Air Conditioning and Heating (AIRAH): “Although the limited ARC (Australian Refrigeration Council) licence only allows workers to install certain systems, anecdotal evidence suggests that Certificate II workers are installing, commissioning and servicing equipment that they are not licensed to work on. This has a two-fold effect of increasing direct emissions (from leaked/vented refrigerant) and indirect emissions (from inefficient systems) as well as increasing safety issues.” AIRAH released recommendations for improving refrigeration management within industry in September 2020.³⁶ AP4CA supports these recommendations.

Australia is particularly vulnerable to climate change. Even if the Paris goal is achieved, global heating of 1.5°C will devastate Australia, destroying a majority of our coral reefs, jeopardising the continuity of water and food supplies, and setting in motion unstoppable multi-metre sea level rise over the coming centuries, which will in time inundate our major cities and destroy billions of dollars of coastal infrastructure.³⁷ Given these projections, **SEPP must require future developments to account for climate risks to protect our communities and investments.**

³³ Energy Efficiency Council, ASBEC (2020), [‘Ensuring quality control and safety in insulation installation’](#).

³⁴ The ecoMaster Store, [‘Why Insulate?’](#).

³⁵ Project Drawdown, [‘Refrigerant Management’](#).

³⁶ AIRAH (2020), [‘HVAC&R Licensing in Australia - Now and towards 2050’](#).

³⁷ NASA (2019), [‘A Degree of Concern: Why Global Temperatures Matter’](#).

Recommendations

To strengthen building industry standards, AP4CA recommends::

8. A commitment by DPIE to maintain or strengthen its oversight of building industry standards and practices, for example by ensuring BASIX, NABERS and tree canopy targets continue to be met, and **strengthening wording in the proposed SEPP to reduce the potential for loopholes.**
9. **Expand BASIX** to require a full lifecycle assessment using consistent methodologies and emissions factor databases determined by the NSW Government (ideally in conjunction with other governments). Use of low embodied emissions and recycled materials should be encouraged where consistent with best LCA outcomes.
10. Require all **new projects and substantial renovations to be built with on-site renewables and storage** with minimum capacities based on their roof and block area ratios. The Australian Energy Market Operator should be consulted to ensure battery sizing and system configuration will help ameliorate the existing “duck bill” curve associated with solar generation, and allow energy generated during the day to be used on site or exported to the grid during peak evening periods.³⁸
11. Amend BASIX so that **new residential housing with off-street parking must have EV-compatible fast charging cables** run to the parking space(s) to facilitate residents choosing electric vehicles over traditional internal combustion engine (ICE) cars.
12. All **architects and building engineers must receive mandatory training** in environmentally sustainable design principles, life cycle assessment, climate risk assessment, the interpretation and application of forward climate projections, and emissions reduction. Such training must include accreditation with ongoing continuing professional development requirements.
13. Similarly, **tradespeople should be required to undertake training and accreditation** to ensure systems are installed safely and operate with maximum efficiency.

³⁸ Refer to this article for more context on the “duck bill” problem and how it can be ameliorated: Renew Economy (2020), [Household battery storage still best fix for solar duck curve problem](#)

14. All projects must explicitly consider climate impacts such as:

- Sea level rise, including for example:
 - Building positioning relative to projected beach/sand dune erosion or tidal river inundation within the next 100 years (including the impacts of storm-surges magnified by sea level rise);
 - Native landscaping to protect dwellings from beach erosion or inundation, including protection and expansion of mangrove zones and other natural storm surge defenses;
 - Specific consideration of equity impacts to neighbouring properties if low lying land is deliberately built up, which might exacerbate flooding elsewhere;

- Extreme precipitation and large hail, for example:
 - Zoning to minimise unsuitable development within flood zones. These decisions should account for projected increases in the frequency and severity of flooding during the lifespan of new buildings;³⁹
 - Roof construction (materials, minimum pitch to prevent collapse from settled hail);
 - Increased permeability of landscaping to minimise runoff;
 - Increased capacity of stormwater systems and onsite detention;

- More intense heat waves, for example:
 - More stringent insulation standards,
 - Passive ventilation design;
 - Compulsory provision of ceiling fans before permitting the installation of highly energy efficient HVAC systems;
 - Provision of heat wave refuges in precincts;

- The urban heat island effect, for example:
 - Native, heat tolerant vegetation;
 - Use of road and pavement surfaces that absorb less heat ;
 - Provision of vegetative-shading to roads and buildings;
 - Light-coloured buildings, roads and roofs (the latter have been mandated in California for over half a decade⁴⁰);

³⁹ In order to improve the durability of building stock, residential structures should be designed with a minimum lifespan of 100 years, and other building types should be designed to safely function for longer. This would also help to counter the conservatism that has been observed in some climate change projections.

⁴⁰ Cool California, [Cool Roofs: Codes and Standards](#).

- Drought, for example:
 - Water capture & recycling;
 - Measures to avoid damage to structures in periods of low soil moisture;
 - Suitability of landscape plants;
 - Alternatives to water-thirsty lawns;

- Bushfires, for example:
 - Refer to recommendations arising from the NSW and Commonwealth enquiries into the 2019/20 bushfires;⁴¹
 - Noting the benefits of on-site electricity generation and grid independence in regional and remote communities;
 - The need to bury power lines and telecommunications cables to improve utilities resilience during and following bushfires.

4. The SEPP Must Incorporate Sustainable Transport Strategies To Ensure Better Designed, Low-Traffic Neighbourhoods

Australia's transport emissions have risen by 64% since 1990 and now account for almost a fifth of our total emissions.⁴² The design of urban spaces is crucial in lowering these emissions. Walking and cycling have the lowest emissions intensity of all modes of transport, but switching to active transport is only possible on a large scale if infrastructure makes this safe and convenient. For example, 56% of Copenhagen cyclists ride a bike because it is quicker than driving – only 1% ride because it is good for the environment.⁴³ The availability of electric bicycles makes this mode of transport even more convenient, increasing the distance a person can comfortably ride by several kilometres.⁴⁴

Every opportunity should be taken in the SEPP to encourage cycling and walking, which are consistently found to have a net benefit to society.⁴⁵ The SEPP should also support public transport to reduce reliance on private cars, which has a net cost and leads to continued

⁴¹ NSW Department of Premier and Cabinet (2020), [Final Report of the NSW Bushfire Inquiry](#) and Royal Commission into National Natural Disaster Arrangements (2020), [The Royal Commission into National Natural Disaster Arrangements Report](#).

⁴² Department of Industry, Science, Energy and Resources (2020), [National Greenhouse Gas Inventory](#). Transport accounted for 18.9% of Australia's national inventory in the year to September 2019.

⁴³ The Guardian (2018), [Copenhagenize your city: the case for urban cycling in 12 graphs](#).

⁴⁴ Science Direct (2019) [Physical activity of electric bicycle users compared to conventional bicycle users and non-cyclists: Insights based on health and transport data from an online survey in seven European cities](#)

⁴⁵ Science Direct (2019), [The Social Cost of Automobility, Cycling and Walking in the European Union](#).

congestion and parking issues in urban and suburban settings — even if electric vehicles (and in future autonomous EVs) are used.⁴⁶

Zero emissions private vehicles are needed for some people and tasks (although not as many as one would think – there are removalists and plumbers in the UK whose main form of transport is the electric cargo bicycle⁴⁷), but they come with an embodied carbon footprint.⁴⁸ With the right infrastructure, NSW residents could swap cars for lower-emission transport options in a wider range of scenarios.⁴⁹

Transport for NSW's recently released Transport Projects Policy requires that every transport project funded by Transport for NSW must include provision for walking and cycling and that provision for walking and cycling must be delivered from the outset of every transport project.⁵⁰ AP4CA welcomes these policies, which must be incorporated into the NSW SEPP. Data from the City of Sydney show that when there are safe, separated cycle lanes, people in NSW will cycle.

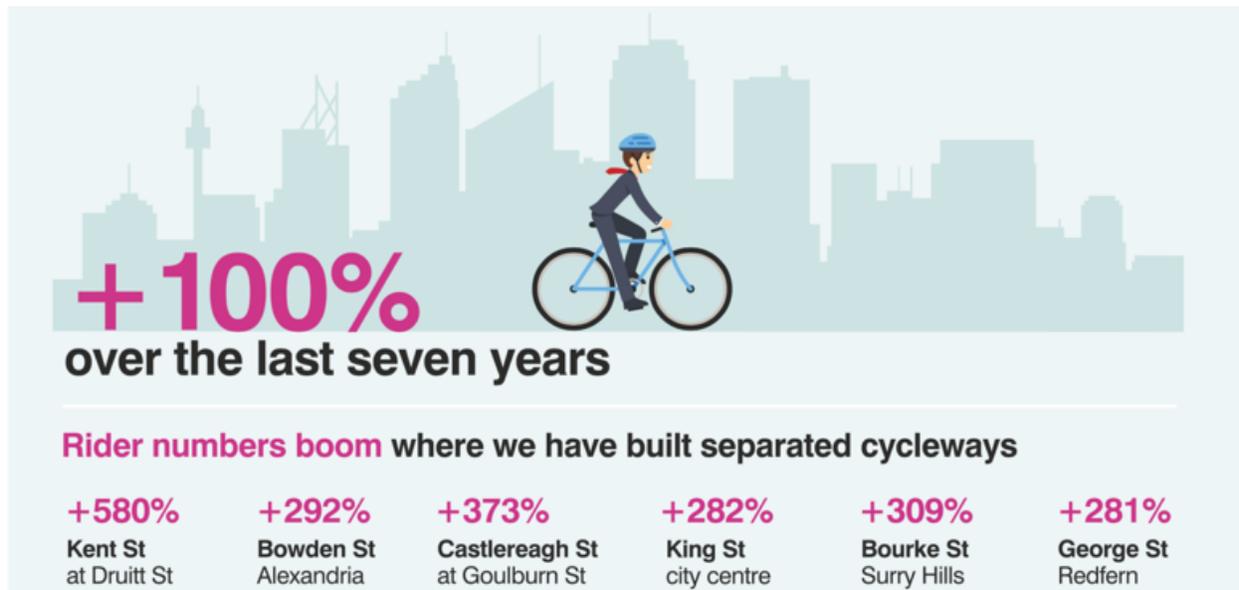


Figure 2: City of Sydney cycleway benefits.⁵¹

⁴⁶ Transport & Environment, '[How clean are electric cars?](#)' and Rodrigue JP (2020), '[Urban Transport Challenges](#)', *The Geography of Transport Systems*, 5th edition.

⁴⁷ Pedal Me (2020), '[Why Cargo bikes? An empirical analysis of the Pedal Me fleet](#)' and Twitter (2020), [@mzdt's thread on Hammersmith plumber Shane Topley](#).

⁴⁸ Transport & Environment, '[How clean are electric cars?](#)'.

⁴⁹ Pedal Me (2020), '[Why Cargo bikes? An empirical analysis of the Pedal Me fleet](#)' and @mzdt on Twitter (2020), [Image of Hammersmith plumber Shane Topley](#).

⁵⁰ Transport for NSW (2021), '[Providing for Walking and Cycling in Transport Projects Policy](#)'.

⁵¹ City of Sydney (2018), '[Cycling strategy and action plan](#)'.

The new SEPP is also an opportunity to incorporate global initiatives like Low Traffic Neighbourhoods and School Streets. Low Traffic Neighbourhoods were introduced throughout Greater London, and elsewhere in the UK, to address the influx of motor vehicle traffic that was being directed through residential areas by mobile mapping technology. The initiative uses a series of traffic filters to stop the influx of traffic and associated congestion, noise pollution, speeding, and air pollution issues.

A six month evaluation of the Low Traffic Neighbourhood in St Peters, London, found that local streets were healthier, with traffic falling by 57%, cycling increasing 43% and rates of speeding falling 65%.⁵² Hackney's London Fields Low Traffic Neighbourhood achieved similar results in its first month, with less traffic recorded on both local and boundary roads.⁵³ So far, two hospital trusts in London have sponsored low traffic neighbourhoods because of the long-term health benefits of these schemes.⁵⁴

The UK's School Streets initiative has also achieved positive results. By implementing temporary restrictions on motorised traffic at school drop-off and pick-up times, the initiative has delivered a 23% reduction in local nitrogen dioxide levels and enabled 18% of parents and carers to avoid having to drive to school.⁵⁵ More than 4 in 5 parents and carers supported the schemes, which were introduced alongside expansions in the separated cycle network and also Low Traffic Neighbourhoods.

Similar schemes could reduce emissions while also greatly improving the health, wellbeing, and safety of communities and children in NSW. New schools should have School Streets and connected walking and cycling links. School streets should be added in the context of modifications to existing school precincts.

We welcome the support for provisions for EV charging that are discussed in the NSW Government's Net Zero Plan. Updating the National Construction Code and BASIX (or its replacement) to support this will save homeowners thousands of dollars if they wish to install an EV charger in the future.⁵⁶

⁵² London Borough of Islington (2021), [St Peter's people-friendly streets trial](#).

⁵³ Hackney Council (2021), [Traffic down in London Fields after low traffic neighbourhood](#).

⁵⁴ The Guardian (2020), [London hospital trust to pay £250k to install LTN for public health benefits](#).

⁵⁵ Mayor of London (2021), [New studies show School Streets improve air quality](#).

⁵⁶ NSW Department of Planning, Industry and Environment, [Net Zero Plan. Stage 1: 2020-2030](#).

Recommendations

To ensure better designed, more sustainable neighbourhoods, AP4CA recommends:

15. Mobility for new buildings and developments should be carbon neutral, through **design for walking and cycling, and support for public transport.**

- Cycling should be viewed as a better alternative than driving a private car.
 - Connectivity *must* be provided for cycling networks (Table 1, item 3 of DPIE's EIE document).
 - There should also be access to electricity within the secure bicycle parking spaces, so residents can easily charge electric bicycles (Table A5, point 9 of DPIE's EIE document).
- All housing should be connected to local shops through a fifteen minute walk and a five minute bicycle ride on either a separated, connected cycleway, or through a Low Traffic Neighbourhood/Shared street with a motorised speed limit of 30 km/h or less (Table 1, item 4 of DPIE's EIE document).
- Grocery shops, primary schools etc. should all be accessible by bicycle in under ten minutes (Table 1, item 4 of DPIE's EIE document).
- Public transport options should be no more than 10 minutes away from housing – and ideally less than five minutes. Bus routes should be available to residents (Table 1, item 4 of DPIE's EIE document).

16. The SEPP should work towards **providing an emissions intensity metric to help property owners make decisions to reduce emissions, and to help prospective property owners understand the relative emissions intensity of properties they are considering purchasing.** This might be as simple as extending the Commercial Building Disclosure requirements to require all property classes for which a NABERS or NATHERS rating is available, to obtain and display a rating in marketing materials and contract documents.

Conclusion

Thank you for considering AP4CA's submission regarding the development of a new SEPP. The development of a new SEPP presents a valuable opportunity for the NSW Government to demonstrate its commitment to emission's reduction through practical, systemic, and achievable measures including committing to carbon neutral or carbon negative projects; phasing out polluting systems; and establishing building strategies and transport strategies.

The time for hollow words about “sustainability” and “greening” is over.