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Project Team - 30-Year Infrastructure Strategy

Infrastructure Victoria

Submitted via webform: <https://engage.vic.gov.au/victorias-30-year-infrastructure-strategy>

To whom it may concern,

RE: ClimateWorks submission to Infrastructure Victoria Draft 30-Year Infrastructure Strategy

ClimateWorks Australia welcomes the opportunity to provide input to Infrastructure Victoria's *Draft 30-Year Infrastructure Strategy Update*. ClimateWorks develops expert, independent solutions to assist the transition to net zero emissions for Australia, South-east Asia and the Pacific. A non-profit organisation, it was co-founded in 2009 by The Myer Foundation and Monash University and works within Monash Sustainable Development Institute.

ClimateWorks has provided a separate, joint submission with the Infrastructure Sustainability Council of Australia (ISCA) and Australian Sustainable Built Environment Council (ASBEC) specific to recommendations 9 and 10 of the draft strategy. The joint submission is attached as an appendix to this document.

Infrastructure Victoria's recommendations can support achieving net zero emissions in Victoria

ClimateWorks supports Infrastructure Victoria's recommendations that will strengthen the alignment of infrastructure planning, assessment, investment decisions and delivery with the *Climate Change Act 2017*, which includes a target of net zero emissions by 2050.



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Since ClimateWorks' launch in 2009 through a partnership between The Myer Foundation and Monash University, philanthropic support has been key to achieving our mission of catalysing Australia's transition to a prosperous, net zero emissions future. This support continues to allow us to remain truly independent, evidence-based and non-partisan.

Decisions made about infrastructure today will shape Victoria's future, including its emissions trajectory, for decades to come. As noted in the Draft Strategy, infrastructure influences 70% of Australia's emissions¹. Strategic decisions made at the start of the infrastructure lifecycle have the greatest impact on emissions, especially with regard to emissions that assets enable through the activities of end users, such as those from electricity and transport use.

Long term infrastructure planning documents like the 30-Year Infrastructure Strategy have a key role to play in:

- prioritising infrastructure investments that will put Victoria on a pathway to net zero emissions
- capturing the growth opportunities for Victoria's economy in a world transitioning to net zero emissions
- ensuring no assets are built that are at risk of becoming 'stranded' because they are not suitable in a zero emissions world

Building infrastructure in accordance with these principles will not only contribute to achieving Victoria's emissions targets, but will also ensure projects in the pipeline continue to attract private investment. Investors are increasingly aligning their portfolios with net zero emissions by 2050², and are testing the economic risks and opportunities potential investments may face in a net zero emissions world³.

ClimateWorks' research highlights the urgency of pursuing Infrastructure Victoria's recommendations quickly and at scale, to ensure the decisions being considered today support achieving net zero emissions by 2050, as well as Victoria's interim emissions targets. ISCA, ClimateWorks and ASBEC's *Issues Paper: Reshaping Infrastructure for a net zero emissions future (2020)*⁴ sets forth the need for infrastructure to lay the foundations for a net

¹ From energy, transport, water, waste and telecommunications infrastructure. ISCA, ClimateWorks Australia and ASBEC (2020) *Issues Paper: Reshaping Infrastructure for a net zero emissions future*, https://www.climateworksaustralia.org/wp-content/uploads/2020/03/ISCA-CWA-ASBEC-Reshaping-Infrastructure-Issues-Paper-March-2020_FINAL-web.pdf

² See, for example, superannuation funds as covered in ClimateWorks (2020) *Net zero momentum tracker – superannuation sector*, <https://www.climateworksaustralia.org/resource/net-zero-momentum-tracker-superannuation-sector/>

³ Such as through the recommendations set out by the Task Force on Climate-Related Financial Disclosures (TCFD), <https://www.fsb-tcfd.org/recommendations/>

⁴ https://www.climateworksaustralia.org/wp-content/uploads/2020/03/ISCA-CWA-ASBEC-Reshaping-Infrastructure-Issues-Paper-March-2020_FINAL-web.pdf

zero emissions future, starting now. ClimateWorks' *Decarbonisation Futures (2020)*⁵ provides a guide for Australian government and business decision-makers on priority technologies, deployment pathways and benchmarks for achieving net zero emissions. ClimateWorks' *Recover and Reduce (2020)*⁶ identifies government investment opportunities, including infrastructure, that will meet key COVID-19 economic recovery objectives of job creation and productivity growth, while also making material progress towards net zero emissions.

In this submission, we first discuss the recommendations that can assist in Victoria's economic recovery from COVID-19 while also reducing emissions. Second, we discuss other recommendations that we support without amendment. Lastly, we propose amendments to some of the recommendations that will strengthen their impact.

Recommendations that support the recovery from COVID-19 can also deliver emissions reductions

ClimateWorks supports Infrastructure Victoria in proposing recommendations that will assist in Victoria's recovery from COVID-19. We suggest that the focus of these recommendations be on actions that will reduce emissions. Our findings in *Recover and Reduce (2020)*⁷ align with the following high-priority action areas in the Draft Strategy. We explain briefly why these areas have a joint benefit and have listed the specific recommendations in the Draft Strategy that ClimateWorks supports.

Upgrade and deliver additional social housing:

- 57. Rapidly renew old public housing
- 73. Set targets to grow social housing
- 94. Expand social housing in regional centres, in locations with good access
- 95. Make social housing suitable for local climates

New social housing and retrofits for existing housing can deliver multiple dividends if the energy efficiency and emissions requirements are set above minimum standards. Residential energy efficiency and electrification upgrades have a job multiplier of 9.8-12.8 jobs created

⁵ <https://www.climateworksaustralia.org/resource/decarbonisation-futures-solutions-actions-and-benchmarks-for-a-net-zero-emissions-australia/>

⁶ <https://www.climateworksaustralia.org/resource/prudent-investments-to-boost-the-economy-and-lower-emissions>

⁷ *ibid*

per \$1m spent⁸, while the job multiplier of constructing new energy efficient homes is estimated to be between 6.6-13.7⁹. ClimateWorks' research shows that the energy performance of housing improves by an average of 44-48% in the next decade for Australia on a pathway to net zero emissions by 2050¹⁰. Table 1 of this submission includes ClimateWorks' suggestions for amending recommendations 57, 73 and 94 to improve the outcomes of investments in social housing.

Enable more active transport and increase interconnected open space:

- 37. Develop an interconnected open space network
- 38. Partner with local governments to fund pedestrian infrastructure
- 39. Transform cycling in Melbourne, Ballarat, Bendigo and Geelong
- 41. Reallocate road space to priority transport modes

The construction of active transport infrastructure is estimated to create 12-15 jobs per \$1m spent¹¹. This infrastructure will facilitate emissions reductions in the transport sector; in scenarios modelled by ClimateWorks that are aligned to net zero emissions by 2050, active transport kilometres Australia-wide increase by 16% between 2020 and 2030.

Fast-track government building upgrades:

- 06. Upgrade energy efficiency of government buildings

Upgrading the energy efficiency of public buildings is estimated to have a job multiplier of 5.3 jobs per \$1m spent¹². ClimateWorks' research shows that the energy performance of commercial buildings improves by an average of 16-25% in the next decade on a pathway to net zero emissions by 2050¹³.

⁸ McKinsey (2020), *How a post-pandemic stimulus can both create jobs and help the climate*, <https://www.mckinsey.com/business-functions/sustainability/our-insights/how-a-post-pandemic-stimulus-can-both-create-jobs-and-help-the-climate>

⁹ International Energy Agency (2020), *Sustainable recovery*, <https://www.iea.org/reports/sustainable-recovery>

¹⁰ ClimateWorks (2020), *Decarbonisation Futures*, p. 90.

¹¹ McKinsey (2020), *How a post-pandemic stimulus can both create jobs and help the climate*, <https://www.mckinsey.com/business-functions/sustainability/our-insights/how-a-post-pandemic-stimulus-can-both-create-jobs-and-help-the-climate>

¹² AlphaBeta (2020), *Clean Jobs Plan*, <https://www.climatecouncil.org.au/resources/clean-jobs-plan>

¹³ ClimateWorks (2020), *Decarbonisation Futures*, p. 90.

Enable clean energy investment:

- 02. Augment electricity transmission for renewable energy and resilience
- 03. Identify and coordinate priority Renewable Energy Zones

Investments in renewable electricity generation is estimated to have a job multiplier of 6.7 jobs per \$1m spent¹⁴, while investments in grid-scale storage and transmission network upgrades are estimated to have job multipliers of as high as 12 per \$1m spent¹⁵. In ClimateWorks' scenarios aligned to net zero emissions by 2050, renewable electricity reaches a penetration of 70-74% of total generation in Australia by 2030¹⁶. Table 1 of this submission includes ClimateWorks' suggestions for amending recommendation 03 to incorporate investments in renewable energy industrial precincts (REIPs).

Support sustainable regional economic growth:

- 28. Facilitate improved recycling infrastructure for priority materials

ClimateWorks supports the identification of improved recycling infrastructure as a contributor to regional economic growth. Analysis by KPMG highlights the potential for a circular economy industry to generate 17,000 jobs and \$210 billion of economic value Australia-wide by 2048¹⁷.

ClimateWorks recommends that investments in electric vehicle infrastructure (as part of recommendation 01. Accelerate the uptake of zero emissions vehicles) also be considered a high priority area that will assist in Victoria's recovery from COVID-19. The construction of electric vehicle charging infrastructure is estimated to generate 12.5 jobs per \$1m spent¹⁸. ClimateWorks' *Decarbonisation Futures* modelling shows over 700,000 electric vehicles on Victoria's roads by 2030 in scenarios aligned to 2 degrees of warming. It is estimated this vehicle stock will require the installation of over 22,000 public chargers by 2030. Table 1 of this submission outlines ClimateWorks' suggestion to include specific targets when

¹⁴ AlphaBeta (2020), *Clean Jobs Plan*,

<https://www.climatecouncil.org.au/resources/clean-jobs-plan>

¹⁵ McKinsey (2020), *How a post-pandemic stimulus can both create jobs and help the climate*, <https://www.mckinsey.com/business-functions/sustainability/our-insights/how-a-post-pandemic-stimulus-can-both-create-jobs-and-help-the-climate>

¹⁶ ClimateWorks (2020), *Decarbonisation Futures*, p. 86.

¹⁷ KPMG (2020), *Potential economic pay-off of a circular economy for Australia*, home.kpmg/au/en/home/insights/2020/05/potential-economic-pay-off-circular-economy-australia.html

¹⁸ AlphaBeta (2020), *Clean Jobs Plan*,

<https://www.climatecouncil.org.au/resources/clean-jobs-plan>

recommending zero emission vehicles uptake be accelerated.

Other recommendations in the Draft Strategy supported by ClimateWorks

ClimateWorks supports recommendations made in the Draft Strategy in addition to those discussed in the previous section. The most relevant additional recommendations are 9 (Specify climate scenarios and carbon value in assessing infrastructure) and 10 (Strategically review climate consequences for infrastructure), which we discuss in further detail in our separate, joint submission with ISCA and ASBEC (see appendix).

ClimateWorks Australia's research on policies and actions that deliver emissions reductions¹⁹ supports the below recommendations in the Draft Strategy. Additional recommendations for which ClimateWorks suggests making amendments are considered in the next section of this submission.

Section 01 - Confront long-term challenges

- 04 - Require 7-star energy-rated new homes in 2022, increasing towards 8 stars by 2025
- 05 - Mandate a home energy rating disclosure scheme
- 07 - Reduce peak electricity use with demand management pricing
- 08 - Allow new gas-free housing estates and review current gas policies
- 09 - Specify climate scenarios and carbon value in assessing infrastructure²⁰
- 10 - Strategically review climate consequences for infrastructure²¹
- 14 - Strengthen agricultural water security by modernising irrigation
- 17 - Prepare for increasingly automated vehicle fleets
- 29 - Strengthen end markets for recycled materials
- 30 - Address barriers to recycling and reducing waste
- 31 - Minimise waste and improve residual waste infrastructure planning

¹⁹ Refer to ISCA, ClimateWorks Australia and ASBEC's *Issues Paper: Reshaping Infrastructure for a net zero emissions future* (2020), and ClimateWorks' reports *Decarbonisation Futures: Solutions, actions and benchmarks for a net zero emissions Australia* (2020), *Moving to Zero: Accelerating the transition to zero-emissions transport* (2020), and *Built to Perform - An industry led pathway to a zero carbon ready building code* (2018, in partnership with ASBEC) on the ClimateWorks website: <https://www.climateworksaustralia.org/>

²⁰ Recommendations 09 and 10 are discussed in further detail in ClimateWorks' joint submission with ISCA and ASBEC, attached as an appendix to this submission.

²¹ *ibid*

- 32 - Produce public plans for priority infrastructure sectors
- 33 - Publish Victoria’s transport plan

Section 02 - Manage urban change

- 40 - Improve walking and cycling data to better estimate travel impacts and benefits
- 42 - Redesign tram routes

Section 03 - Harness infrastructure productivity and growth

- 62 - Reshape the metropolitan bus network
- 64 - Increase suburban rail corridor services and capacity
- 69 - Expand rail access in outer suburbs

Section 04 - Develop regional Victoria

- 85 - Reform regional public transport to meet local needs

Strengthening the recommendations

ClimateWorks suggests amendments to the recommendations of the Draft Strategy as set out in the table below.

Table 1: Suggested amendments to Draft Strategy recommendations

| Recommendation | Suggested amendment |
|---|--|
| 01 - Accelerate the uptake of zero emissions vehicles | Include specific metrics to clarify the pathway for phasing out internal combustion engines in line with Victoria’s net zero emissions by 2050 target. For example, ClimateWorks’ <i>Decarbonisation Futures</i> scenarios for Australia include electric vehicles comprising 50% of new light vehicle sales by 2030 to align with 2 degrees of warming. This proportion increases to 76% under a 1.5 degrees scenario ²² . This would support government transport agencies, for example, in determining infrastructure investment requirements for achieving these metrics. |

²² ClimateWorks Australia (2020), *Moving to Zero*, p.19

| | |
|---|---|
| <p>03 - Identify and coordinate priority Renewable Energy Zones</p> <p>81 - Upgrade power supply for agriculture and regional manufacturing</p> | <p>Include a recommendation for the state government to fund the establishment of renewable energy industrial precincts (REIPs) in conjunction with Renewable Energy Zones (REZs).</p> <p>These precincts can support a cluster of industrial businesses (e.g. manufacturers) and provide access to low-cost renewable energy through the precinct being located within Renewable Energy Zones (REZs) or connected to renewable energy generation through high voltage transmission lines.</p> <p>REIPs can support in delivering recommendation 81 as well as multiple objectives of the Draft Strategy, including lifting productivity, promoting sustainable production, and advancing climate change mitigation. REIPs can attract new businesses and investment to regions, scale up and create new jobs in emerging low carbon industries, and help carbon intensive industries capture the benefits of cheaper renewable energy.</p> <p>REIPs could be funded through a Commonwealth/State government co-investment partnership model whereby the Victorian Government administers competitive tenders designed to call for a certain volume of renewable energy usage per year by industrial users in a REIP. Successful bidders may also be eligible to receive low-interest finance from the CEFC to cover risk of default.</p> |
| <p>04 - Require 7-star energy-rated new homes in 2022, increasing towards 8 stars by 2025</p> | <p>Include actions to ensure positive outcomes for residents of new housing, and reduce the risk of unintended consequences that result in poor outcomes for Victorians and threaten community and industry support for future strengthening of energy standards. For example:</p> <ul style="list-style-type: none"> ● Strengthen compliance and enforcement of existing building code regulations, building on DELWP’s As-built Compliance Verification program²³, and support industry to comply with new regulations ● Address health and ventilation requirements of the |

²³ See <https://www.energy.vic.gov.au/energy-efficiency/building-standards>

| | |
|--|--|
| | <p>building code in tandem with energy efficiency requirements, to avoid unintended consequences of more airtight buildings such as condensation and mould issues or trapping of harmful indoor airborne pollutants</p> |
| <p>17 - Prepare for increasingly automated vehicle fleets</p> | <p>Explicitly outline how plans and policies to facilitate autonomous vehicles (AVs) will reduce rather than increase vehicle emissions. The effect autonomous vehicles will have on emissions in Australia is currently unclear. International studies offer estimates of the impact AVs will have on emissions, ranging from 2-25% reduction or 3-20% increases²⁴. As these vehicles emerge, there is an opportunity for the government to shape how AVs will impact overall vehicle kilometres, vehicle ownership rates, fuel use and, more broadly, how transport systems are used.</p> |
| <p>32 - Produce public plans for priority infrastructure sectors</p> | <p>Where relevant, link public plans for infrastructure sectors to the sectoral emissions pledges required under the <i>Climate Change Act 2017</i>. This will ensure land use planning, infrastructure planning, and emissions reductions strategies are integrated and work efficiently in unison.</p> |
| <p>36 - Deliver very low income housing with inclusionary zoning 57 - Rapidly renew old public housing 58 - Upgrade and rebuild public hospital infrastructure 73 - Set targets to grow social housing</p> | <p>Recommend that delivery agencies incorporate energy efficiency and emissions requirements into retrofits and new builds beyond minimum standards. In ClimateWorks' scenarios in alignment with the Paris Agreement, the energy performance of Australian housing improves by an average of 44-48% in the next decade²⁵. For commercial buildings the improvement in energy performance is 16-25%.</p> <p>These building investments should also include actions to reduce the risk of poor outcomes and unintended</p> |

²⁴ Taiebat, M, Brown, AL, Safford, HR, Qu, S, & Xu, M (2018) *A Review on Energy, Environmental, and Sustainability Implications of Connected and Automated Vehicles*. Environmental Science & Technology, vol. 52(20), pp. 11449–11465; Gawron et al. (2018) *Life cycle assessment of connected and automated vehicles*. Environmental Science & Technology, vol. 52, pp. 3249–3256.

²⁵ ClimateWorks (2020), *Decarbonisation Futures*, p. 90.

| | |
|---|---|
| <p>74 - Build new hospital capacity 94 - Expand social housing in regional centres, in locations with good access</p> | <p>consequences for building users, as per our suggestion for recommendation 4.</p> |
| <p>48 - Remove annual charges while introducing distance-based pricing for electric vehicles</p> | <p>Substantial government policies will be required to enable an accelerated transformation of Victoria’s vehicle fleet this decade. ClimateWorks recommends that any electric vehicle distance-based pricing policies be accompanied by policies that adequately incentivise vehicle uptake until significant momentum has shifted to electric vehicles.</p> |

On behalf of ClimateWorks, we thank you for the opportunity to provide input in response to the *Draft 30-Year Infrastructure Strategy*. We would welcome an opportunity to brief your team on this submission. Please do not hesitate to contact me if you have any further questions.

Yours sincerely,

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