

Transport and Infrastructure Net Zero Consultation Roadmap

Take the survey

Department of Climate Change, Energy, Environment and Water

Response received at:

August 5, 2024 at 9:05 AM GMT+10

Response ID:

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- 1 Confirm that you have read and understand this privacy notice.
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- 2 Please indicate how and if you want your submission published.
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Yes
- 5 First name
Not answered
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Not answered
- 9 Who are you answering on behalf of?
Organisation
- 10 Organisation name
Transurban
- 11 What best describes you or your organisation?
Industry
- 12 What sector do you represent?
Not answered
- 13 What state or territory do you live in?
Victoria
- 14 Postcode
3008
- 15 What area best describes where you live?
City
- 16 1. Do you support the proposed guiding principles?
Not answered
- 17 1.1 Please add details to your response.
Not answered
- 18 2. Do you support the use of the avoid-shift-improve framework as a tool to identify opportunities for abatement?
Not answered

- 19** 2.1 Please add details to your response.
Not answered
- 20** 3. Do you agree the development of a national policy framework for active and public transport will support emissions reduction?
Not answered
- 21** 3.1 Please add details to your response.
Not answered
- 22** 4. What should be included in a national policy framework for active and public transport and how should it be developed?
Not answered
- 23** 5. What additional actions by governments, communities, industry and other stakeholders need to be taken now and in the future to ensure the movement of people contributes to transport emissions reduction?
Not answered
- 24** 6.1 What additional actions by governments, communities, industry and other stakeholders need to be taken now and in the future to ensure that the movement of goods contributes to transport emissions reduction?
Not answered
- 25** 6.2. How would these actions address the identified challenges and opportunities for emissions reduction in the movement of goods?
Not answered
- 26** 7. Do you agree with the proposed net zero pathway for light road vehicles?
Not answered

- 27 7.1 Please add details to your response.
Not answered
- 28 8. The Australian Government is currently developing an Australian New Vehicle Efficiency Standard and has already begun to implement actions in the National Electric Vehicle Strategy.8.1 What additional actions by governments, communities, industry and other stakeholders need to be taken now and in the future to reduce light vehicle emissions?
Not answered
- 29 8.2 How would these actions address the identified challenges and opportunities to reduce light vehicle emissions?
Not answered
- 30 9. Do you agree with the proposed net zero pathway for heavy road vehicles?
Not answered
- 31 9.1 Please add details to your response
Not answered
- 32 10. The proposed pathway for heavy road vehicles relies on a mix of battery electric, hydrogen fuel-cell and low carbon liquid fuels.Rank from 1 to 3, the order in which these should be prioritised for emissions reduction.
Not answered
- 33 10.1 Please add details to your response. Why did you rank them in that order?
Not answered
- 34 11. What role should low carbon liquid fuels play in the heavy vehicle

decarbonisation?

Not answered

- 35 12. What additional actions by governments, communities, industry and other stakeholders need to be taken now and in the future to reduce heavy vehicle emissions?

Not answered

- 36 13. Do you agree with the proposed net zero pathway for rail?

Not answered

- 37 13.1 Please add details to your response.

Not answered

- 38 14. The proposed pathway for rail relies on a mix of battery electric, hydrogen fuel-cell and low carbon liquid fuels. Rank from 1 to 3, the order in which these should be prioritised for emissions reduction.

Not answered

- 39 14.1 Please add details to your response. Why did you rank them in that order?

Not answered

- 40 15. What role should low carbon liquid fuels play in rail decarbonisation?

Not answered

- 41 16. What additional actions by governments, communities, industry and other stakeholders need to be taken now and in the future to reduce rail emissions?

Not answered

- 42 16.1 How would these actions address the identified challenges and

opportunities to reduce rail emissions?

Not answered

43 17. Do you agree with the proposed net zero pathway for maritime?

Not answered

44 17.1 Please add details to your response.

Not answered

45 18. The Australian Government is engaging in consultation as part of the development of the Maritime Emissions Reduction National Action Plan and those consultations will also inform the final Roadmap and Action Plan. 18.1 What additional actions by governments, communities, industry and other stakeholders need to be taken now and in the future to reduce maritime emissions?

Not answered

46 18.2 How would these actions address the identified challenges and opportunities to reduce maritime emissions?

Not answered

47 19. Do you agree with the proposed net zero pathway for aviation?

Not answered

48 19.1 Please add details to your response.

Not answered

49 20. The Australian Government has already engaged in consultation on aviation decarbonisation through the development of the Aviation White Paper and those consultations will also inform final Roadmap and Action Plan.

Not answered

- 50 20.1 What additional actions by governments, communities, industry and other stakeholders need to be taken now and in the future to reduce aviation emissions?
Not answered
- 51 21. Do you agree with the proposed net zero pathway for transport infrastructure?
Not answered
- 52 21.1 Please add details to your response.
Not answered
- 53 22. What additional actions by governments, communities, industry and other stakeholders need to be taken now and in the future to reduce transport infrastructure emissions and ensure that transport infrastructure is ready for and enables low-emission transport modes?
Not answered
- 54 22.1 How would these actions address the identified challenges and opportunities to reduce transport infrastructure emissions?
Not answered
- 55 23. What additional actions by governments, communities, industry and other stakeholders need to be taken now and in the future to ensure the energy mix is ready to support transport emissions reduction?
Not answered
- 56 24. How should the use of low carbon liquid fuels (LCLFs) be prioritised across different transport modes over time to achieve maximum abatement?
Not answered

- 57 25. What are the best ways for the Australian Government to work collaboratively with industry, business, governments and communities to implement the proposed pathways?
Not answered
- 58 25.1 What are good domestic or international examples of partnership and collaboration on transport and transport infrastructure emissions reduction that could inform the final Roadmap and Action Plan?
Not answered
- 59 25.2 What opportunities can Government leverage to show leadership in Australia and internationally?
Not answered
- 60 26. What measures and metrics should be used to evaluate the final Transport and Infrastructure Net Zero Roadmap and Action Plan?
Not answered
- 61 26.1 What other data and evidence could governments use and how could this offer further insights on the pace, scale and location of transport emissions reduction pathways?
Not answered
- 62 27. Do you have any feedback on the proposed review process?
Not answered
- 63 28. Do you have any further feedback on the Consultation Roadmap and proposed pathways?
Not answered
- 64 28.1 Is there anything missing? Are the sections appropriately integrated? Is the Roadmap appropriately ambitious?
Not answered

65 29. Is there any further information or documentation that you wish to be considered with your submission?

Not answered

66 Would you like to upload a document?

Yes

67 Have you removed any identifying information from your submission?

Yes

68 Upload a submission

197 Redacted

Transurban_s_response_Transport_and_Infrastructure_Net_Zero_Consultation_.1555d7Of.pdf

69 Upload a submission

Not answered

70 Upload supporting file

Not answered

71 Upload supporting file

Not answered

2 August 2024

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To whom it may concern,

Re: Transport and Infrastructure Net Zero Consultation Roadmap – Transurban’s response

Thank you for the opportunity to contribute to the Transport and Infrastructure Net Zero Consultation Roadmap.

Transurban is an ASX-listed toll road company. Since beginning operations in 1996, we’ve partnered with governments to build and operate toll roads across Australia and North America. Over this time, we have delivered approximately \$32 billion in greenfield and enhancements projects in Brisbane, Sydney, and Melbourne and the Greater Washington Area.

Climate change directly influences our business, operations, supply chain and communities. With a weighted average concession life for our assets of over 28 years, we recognise the importance of transitioning to a net zero economy.

In line with the Australian Government, Transurban has committed to achieving net-zero emissions by 2050 for our business and supply chain. Last year we exceeded our near-term 2030 Science Based Targets Initiative (SBTi) validated scope 1 and 2 target, for a 50% absolute reduction in Scope 1 (fuel) and 2 (electricity) emissions, seven years ahead of schedule.


We acknowledge that transport and infrastructure are resource intensive and reducing emissions from these areas is challenging. We continue to work with our suppliers on decarbonisation strategies in order to address our Scope 3 (supply chain and major projects) emissions.

In this submission we have outlined some of the strategies we’re implementing, their relevance to the Government’s proposed roadmap and recommendations for consideration. For further detail on Transurban’s sustainability initiatives and achievements, please see our [FY23 Corporate Report](#).

To discuss this submission further, please do not hesitate to contact 

Thank you again.

Sincerely,


Amy Hogan
Head of ESG and Sustainability
Transurban

1. Decarbonising roads (light vehicles)

Electric vehicles are the primary way to reduce emissions on the road and are becoming increasingly popular in Australia - 8.1% of new car sales in 2023 were electric, up from 3.8% in 2022.

In order to achieve 100% zero-emission vehicle fleet by 2050, we need to achieve around 30% EV market share by the end of 2027. By 2030, around 50-60% of all new vehicles purchased need to be EVs.

[Research commissioned by Transurban](#) and undertaken by Nature since 2021 has examined the barriers to EV adoption in detail.

We found that ownership of hybrid and electric vehicles in the cities we operate in is low (13%), however 40% of respondents would like their next car to be an electric vehicle.

When asked about barriers to adoption, three main factors were holding people back:

- high purchase cost
- lack of charging infrastructure
- concern around cost to charge.

High purchase price was the number one barrier to adoption in the Australian cities surveyed. Most people told us they would be willing to pay somewhere between \$20,000 to \$79,000 for a new electric vehicle.

SUVs have become the most popular model of vehicle sold in Australia with sales rising from around 16% of new car sales in 2013, to more than half of all new car sales in 2023. Because SUVs are bigger and heavier than sedans they tend to use more fuel and emit more greenhouse gases. It has been reported that their rapid rise in popularity has effectively wiped out the climate gains from electric vehicles.

The median price of an electric SUV in Australia is around \$85,000, much higher than the price people generally spend on new cars, with Australians spending an average \$37,362 on new cars and \$39,857 on new SUVs.

Our research also found that most people surveyed plan to buy a new car within three years. As 51% indicated that the model they would most likely choose would be a SUV, it's critical that consumers are provided with affordable electric options.

The Federal Government's New Vehicle Fuel Efficiency Standards should help to address this imbalance and we expect to see more fuel-efficient options available in the near future.

Lower cost of electricity to charge at home or work, more public electric vehicle charging stations and government incentives when buying a new electric vehicle (e.g., cash back schemes) would incentivise those considering taking the plunge into electric vehicle ownership.

In Australia, government incentives are available however they vary between states, including rebates, stamp duty exemptions and registration discounts. A similar national approach could be taken with electric vehicle incentives.

As a method of accelerating the reduction of transport related emissions, applying a data –driven and targeted approach will deliver the greatest impact. That's why we conducted two pieces of research this year as part of our EVs for Everyone program (see case study below).

We utilised our internal travel data to identify high mileage and car reliant communities in each of the states in which we operate. After identifying these LGA's, we conducted a further study to better understand the motivations, barriers and solutions to enabling a transition to electric vehicles in these specific areas. Some of our key findings were:

- 30% of respondents were willing to switch to an EV when it costs the same or less than a non-EV, 20% said their main motivation for moving to EV was for environmental reasons and to reduce their carbon footprint, 15% said they were

willing to switch to an EV when it was convenient as driving a non-EV, and only 33% were not interested in switching to an electric vehicle for the foreseeable future.

- Higher income correlates with stronger interest in electric vehicles (EVs) and a greater willingness to switch
- Most respondents are unaware of potential total cost ownership savings of a switch to electric, and even after being informed, upfront costs remain a concern
- As distance from the Central Business District (CBD) increases, interest in EVs and perceived reliability decrease. This suggests a pressing need to address range anxiety and promote the development of the charging infrastructure network, especially for residents in outer suburbs who might feel left behind in the EV transition.

Access to green energy solutions at home, such as solar panels and batteries, positively influences EV interest. However, income plays a significant role here. Higher-income residents are more likely to have green energy solutions and be able to charge their vehicles overnight, and they also have greater awareness of available EV support schemes. Since access to green energy solutions at home significantly influences EV interest, promoting the installation of solar panels and home batteries, and providing incentives for green energy solutions (especially for lower-income households) can drive EV adoption. To support EV adoption for residents who lack access to green energy solutions at home, such as renters and/or apartment dwellers, additional support is required for affordable and convenient charging infrastructure at home and in public.

Those who rely heavily on cars and rarely use public transport are less interested in EVs and more sceptical of the technology. This suggests that access to diverse transportation options fosters openness towards EVs. It reinforces the idea that unequal access to mobility contributes to loyalty towards traditional fuel-powered vehicles and skepticism towards new technologies like EVs. Providing clear, detailed information about the advancements and reliability of EV technology can help alleviate skepticism. Support programs, such as EV experience days and extended test drives, can also help potential buyers become more comfortable with the technology

Recommendations

1. Consider additional policy options aligned to international standards that further promote the acceleration of EV uptake and appropriate phasing out of ICE vehicles. Increase availability of affordable EV options (see case study)
2. National approach to EV incentives, with focus on charging infrastructure and cost of electricity including green energy solutions for homes

Case study: EVs for Everyone

In response to the challenge of EV affordability in Australia, Transurban has launched an initiative 'EVs for Everyone' which is aimed at better understanding and educating communities about solutions that can both reduce emissions and costs associated with owning an electric car.

Through research and community trials, Transurban will assess the accessibility and effectiveness of these solutions via real-life case studies with communities, showcasing the benefits and realities of switching to sustainable transport and energy solutions such as electric vehicles, solar and mobility services.

Using a targeted and data-driven approach, Transurban will identify communities where a high annual volume of kilometres are being travelled by car and where electrification could deliver the greatest reduction in emissions and running costs.

We believe that a collective and coordinated approach is needed across government and industries, which is why we're taking steps to collaborate with others seeking to address the challenge of EV affordability. By sharing the collective benefits of solutions already available in Australia today, and providing recommendations to address gaps in practical application, we hope to provide valuable insight that can accelerate the EV transition where it matters.

2. Decarbonising freight and supply chains

Low and zero emission vehicles – such as hybrids and electric vehicles (EVs), including EV freight – have the potential to significantly minimise road travel's emissions, as well as improve air and noise pollution. Technology that is already available today in electric trucking has the capability to rapidly decrease freight emissions but relies on supportive policy and initiatives to overcome cost barriers involved in upgrading to newer electric trucks and installation of charging.

To support the high percentage of truck owners that do not have access to a depot, charging solutions such as shared charge parks could play a critical role. Facilitation of shared facilities and cost would support the acceleration of the necessary infrastructure.

We also recognise the role of green hydrogen as an important future fuel in decarbonising Australian industry, including potential fuel cell electric vehicle (FCEV) road transport applications for ultra-heavy and/or long-haul freight. The lack of availability of green hydrogen and heavy investment costs in making it available to the Australian market, are holding back the ability for this fuel source to deliver a reduction in emissions for the industry.

As part of our commitment to reducing emissions, Transurban has been promoting the benefits of EVs through public awareness campaigns for many years.

An example of this is through our continued support of the Parliamentary Friends of Electric Vehicles and Future Fuels Transport Group, which is a bipartisan group of Federal MPs focused on addressing issues slowing Australia's transition to EVs. As noted in the case study above, the actions we take to encourage EV adoption could have a multiplier effect, reducing emissions both on and off our roads. By engaging with government and communities to showcase real-life case studies and affordability solutions, we aim to increase adoption of EVs. We balance our environmental responsibilities with our commitment to road safety, and it is critical that risks from battery heavy vehicles, especially in road tunnels, are understood and can be managed to facilitate widespread uptake of battery heavy vehicles across the Australian road network.

2.1 Heavy vehicle battery fire management

As the technology and product on our roads change and we plan for increasingly electrified heavy duty vehicle sector, Transurban is assessing how this will impact our incident response process and protocols such as in the case of a heavy-duty electric fire.

EV fires are extremely rare, with ICE vehicles at least 20x more likely to catch fire than an EV.¹

However, with less experience and information available on how best to address an EV fire, there is a need for greater collaboration, information sharing and funding, for Australia to fully understand how operational plans need to be adapted and what necessary road upgrades may be required.

The risk to road assets from EV fires is thermal runaway – a self-sustaining chemical reaction within the battery that can spark a fire. EV battery fires can also burn for several hours and reignite for several days after the initial fire is extinguished.

The current primary methodology for controlling a heavy vehicle battery fire is to use water. If a heavy vehicle battery fire took place in a tunnel, that would mean the water deluge system would be activated. Due to the expected longevity of battery fires,

¹ Swinburne University of Technology, '[Electric vehicle fires are very rare. The risk for petrol and diesel vehicles is at least 20 times higher](#)', 15 September 2023.

enormous quantities of water are needed. For example, a battery truck fire on the West Gate Freeway in Victoria in November 2023 required full water loads from seven Fire Rescue Victoria vehicles, as well as hydrant water, to extinguish the fire.

More industry collaboration, experience and funding is needed in Australia to confidently understand the risk of EV battery fires in road tunnels, develop suitable management plans, and undertake any required asset or system upgrades.

To address this in Victoria, the Department of Transport and Planning has established a working group with Transurban, and Fire Rescue Victoria focused on EV fire management and the impact of battery heavy vehicles on the Victorian road network. This is a positive first step, but a national long-term plan agreed to with asset operators is also required.

Addressing this barrier will unlock key assets in the Australian road network for use by battery heavy vehicles, supporting the business case for operators making the transition to EV freight.

2.2 Autonomous freight

Transurban roads are designed and constructed for the long-term, ensuring they deliver real and lasting benefits to cities and their communities. We are also focused on where new innovations in the future might play a role in improving the efficiency of our assets without compromising safety.

A known innovation is the rise of partially-automated and fully-automated passenger and heavy vehicles, which Transurban is at the forefront of trialling and testing across Australia. Over the past eight years, Transurban has conducted 11 CAV trials across all our markets, ranging from partial automation of passenger vehicles to heavy vehicles fitted with highly automated driving features.

Automation and low-emissions technology go hand-in-hand, comprising one of two technology options: battery electric trucks (BETs) and hydrogen fuel cell electric trucks (FCETs).

Connected vehicles are already providing benefits on the road, and continuing to encourage the uptake of smart technology in heavy vehicles has the potential to better utilise existing assets, increasing network capacity. This is due to smart vehicles ability to improve traffic flow, through both their superior acceleration and interface with traffic management systems.

Utilising highly automated heavy vehicles overnight can also make road assets safer, more efficient and more productive, without the need for costly physical enhancements.

Government support for CAVs trials remains key. This may include streamlining trial arrangements at a national level to attract global autonomous vehicle companies to test in Australia. Leveraging learnings from large-scale and complex trials is crucial to better understand the technology and bring Government, regulatory bodies, industry and the community along the journey.

Additionally, the knowledge that Australian infrastructure is suitable for smart, low emissions vehicles will give the freight industry information required to invest in new technology with confidence.

2.3 Benefits of tolled routes

Toll roads also provide crucial connections for freight vehicles travelling between distribution centres, airports and ports. Diverting trucks onto toll roads and off residential streets means safer local roads, improved air quality and less truck noise for communities.

As well as delivering quicker trips compared to untolled routes, toll roads can also help make surrounding roads more efficient and reliable, and arterial roads can experience faster travel times. This in turn can result in lower fuel consumption and vehicle operating costs for all motorists.

For example, when NorthConnex in Sydney opened in October 2022, there was a marked improvement in congestion on the surface roads above the tunnel. This included Pennant Hills Road, a notoriously congested arterial road heavily utilised by trucks which is now up to 26% less congested.

NorthConnex takes an average 6,700 heavy vehicles off the road each day due to regulations which stipulate that trucks and buses (over 12.5 metres long or over 2.8 metres clearance height) travelling between the M1 and M2 must use the tunnels unless they have a genuine pick up or delivery.

Similarly, in Victoria trucks using CityLink who are travelling at night receive discounted tolls to incentivise use, removing these vehicles from local communities.

Recommendations

3. Coordinated long term plan on the management of EV battery fires
4. Government support for CAV trials
5. Remove barriers and encourage imports of low-emission/smart freight
6. Incentivise freight to use motorways

3. Supporting the transport sector's net zero pathway

Well-functioning cities need a balance of all transport modes – road transport, public transport and active transport. We're going to need to develop a diverse mix of transport modes to ensure Australian cities remain efficient in the face of a growing population.

Population growth is a fundamental factor behind increased traffic. Over the past two decades, population growth has driven an increase in traffic and this is expected to continue for the next 20 years.

With this expected increase in traffic, and the transport sector anticipated to be the largest contributor of GHG emissions in Australia by 2030, the electrification of transport is critical. To help us get there, consideration should be given to new ways of incentivising EV drivers.

Incentives would also be valuable during the design and construction phases of major projects. One of the ways we embed emission reductions in our decision-making is by utilising Infrastructure Sustainability ratings on our major projects, which are facilitated by the Infrastructure Sustainability Council. The rating tool benchmarks best practice sustainability standards with an increased focus on social, cultural, environmental and economic benefits. Contracts for major projects could incentivise IS ratings as a way to ensure better environmental outcomes.

Similarly, government contracts could stipulate the use of low-carbon materials. By incentivising low carbon materials uptake, green supply chains can thrive. Providing guaranteed volumes for recycled content will make the process financially viable and therefore easier for industry to adopt.

We would also like to see, over time, embodied carbon of materials is considered as part of the tender process. For example, tenders could include a minimum weighted valuation applied to each criterion. Early engagement with contractors is also important, allowing them more time to find and evaluate low-carbon alternatives in the supply chain.

To help support these outcomes, Transurban is working with all parts of our supply chain with a particular focus on high-impact materials including concrete, steel and asphalt. Transurban is committed to improving the sustainability of our supply chain through partnerships and collaboration. We assess new project tenders against environmental and social factors. Each tender has a different scope, so we aim to take a holistic approach and are considerate of all ESG (Environmental, Social and Governance) topics, including green supply chain opportunities.

In 2016, Transurban conducted the first real-world test of a road user charging model in Australia. The study demonstrated that a road user charging funding model would work in Australia and can provide a sustainable, fair and flexible funding system that grows with demand. More recently, research we undertook in 2021 found that most people believe a road-user charge model would be a fair way to contribute towards road funding.

It will be critical that if a road user charging funding model is introduced at a federal level, it is designed in a way that further supports and encourages a transition to zero-emission vehicles. The road user charging funding model design, and how it impacts individuals as part of a wider set of zero-emission policy and incentives, must not negatively skew the total cost of ownership of electric vehicles. If this were to be the case, it could be detrimental to achieving transport decarbonisation targets as cost is the main barrier to adoption in Australia.

Australia must move towards a sustainable road-funding system to ensure our transport infrastructure is resilient into the future, and prevent congestion undermining the liveability and productivity of our cities.

In a funding-limited environment, there is opportunity to get better use from existing infrastructure or modify it to meet changing needs before considering a new build. As referenced in section 2, this could include better utilising smart vehicles and smart road infrastructure to make roads more efficient. Transurban is well placed to support the Government in this space.

Given that a significant portion of the nation's transport infrastructure is managed by or on behalf of governments, leveraging government policies becomes crucial for driving emissions reductions in this sector. National standards are critical and should build upon state-level efforts, recognising that states handle most infrastructure delivery.

Recommendations

7. Incentivise research, adoption and implementation of new vehicle and on-road technology
8. Explore incentivising IS ratings and low carbon materials uptake
9. Explore how government, industry and suppliers can better share risk in order to encourage the uptake of innovative, low-carbon materials
10. Implement sustainable road funding system T
11. Implement national transport infrastructure standards