

# Transport and Infrastructure Net Zero Consultation Roadmap

## Take the survey

Department of Climate Change, Energy, Environment and Water

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Response received at:

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- 1 Confirm that you have read and understand this privacy notice.  
Yes
- 2 Please indicate how and if you want your submission published.  
Public
- 3 Published name  
Australian Sustainable Built Environment Council
- 4 Confirm that you have read and understand this declaration.  
Yes
- 5 First name  
Not answered
- 6 Last name  
Not answered
- 7 Email  
Not answered

- 8** Phone  
Not answered
- 9** Who are you answering on behalf of?  
Organisation
- 10** Organisation name  
Australian Sustainable Built Environment Council
- 11** What best describes you or your organisation?  
Not answered
- 12** What sector do you represent?  
Not answered
- 13** What state or territory do you live in?  
New South Wales
- 14** Postcode  
2010
- 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

269 Redacted

240806\_ASBEC\_DITRDCA\_Transport\_and\_Infra\_Net\_Zero\_Roadmap.638c8aed.pdf

69 Upload a submission

Not answered

70 Upload supporting file

Not answered

71 Upload supporting file

Not answered

6 August 2024

Department of Infrastructure, Transport, Regional Development, Communications and the Arts (DITRDCA)  
Submitted via [NetZero@infrastructure.gov.au](mailto:NetZero@infrastructure.gov.au)

Dear Net Zero Unit team

## ASBEC Submission: Transport and Infrastructure Net Zero Consultation Roadmap

The Australian Sustainable Built Environment Council (ASBEC) welcomes the opportunity to make a submission to the Australian Government's Transport and Infrastructure Net Zero Consultation Roadmap. We recognise that the intent of the current roadmap is to seek feedback on potential pathways for transport and transport infrastructure to support economy-wide net zero as well as the actions or policies the Australian Government will need to take to support these potential pathways.

ASBEC is a collaborative forum of peak bodies in the Australian built environment, focused on sustainable, productive, and resilient buildings, communities, and cities. Our membership<sup>i</sup> consists of industry associations, professional bodies, academia, non-government organisations and government observers who are involved in the planning, design, delivery, and operation of our built environment.

ASBEC has a longstanding focus on cities, infrastructure and urban-scale policy to support our vision of a sustainable, liveable, productive, equitable and resilient built environment. Our organisational purpose strives for policy development in alignment with the UN Sustainable Development Goals and Paris commitments. Our work in this space includes:

- [Investing in Cities<sup>ii</sup>](#), a platform supporting the productivity, liveability, sustainability and resilience of our cities
- [Low Carbon, High Performance<sup>iii</sup>](#), which outlines the potential of the built environment to reduce Australia's emissions
- [Bang for Buck<sup>iv</sup>](#), which provides insight across all levels of government across Australia on practical interventions to deliver better community outcomes from infrastructure spending
- [Reshaping Infrastructure for a net zero emissions future<sup>v</sup>](#), which explores the challenges and opportunities in reshaping transport, energy, water, communications and waste infrastructure for a net zero emissions world
- ASBEC's recent Issues Paper: [Embodied carbon emissions in Australia's built environment<sup>vi</sup>](#) which highlights the issues that need to be addressed to successfully tackle embodied carbon and to achieve Australia's commitment to net zero carbon emissions by 2050.

Noting that urgent action on climate change is required, ASBEC strongly supports the Australian Government's Net Zero by 2050 plan and an emissions reduction target of 43% below 2005 levels by 2030. We acknowledge and support the development of the Transport and Infrastructure Net Zero Roadmap and Action Plan as a mechanism to facilitate decarbonisation across the economy. We also note that this transition to a decarbonised built environment needs to be delivered holistically, and in a just and equitable way.

Concurrent to this process, the Australian Government is also updating and releasing several national strategies and frameworks that will impact and complement this roadmap and action plan. This includes the six sectoral plans covering all major components of the economy, along with cross thematic work such as the National Urban Policy, National Electric Vehicle Strategy, National Energy Performance Strategy and



Trajectory for Low Energy Buildings. **We urge the Department of Infrastructure, Transport, Regional Development, Communications and the Arts (DITRDCA) to develop the transport and infrastructure roadmap and action plan in close collaboration with the other sector plans and government mechanisms, supporting a holistic approach to emissions reduction across the economy.**


ASBEC suggests the following priorities for DITRDCA in relation to the Transport and Infrastructure Net Zero Roadmap:

- 1. Ensure that infrastructure emissions reduction strategies use a decarbonisation hierarchy when targeting priority areas for intervention and deploy strategies to address embodied, operational and enabled emissions.**
- 2. Coordinate efforts across multiple sectors of the economy to address decarbonisation challenges.**
- 3. Collaborate with governments, industry and the community providing support for net zero capacity-building, innovation and knowledge-sharing.**

See the following pages for our detailed responses on the above priorities.

There is a unique opportunity within the built environment to dramatically reduce both carbon emissions and energy demand in highly cost-effective ways that will also stimulate the economy. The built environment has the technology and to decarbonise now, but we must do this at speed and scale to smooth the way for other slower-to-abate sectors and achieve Australia's legislated emission reduction targets.

Australian Government's Net Zero by 2050 Plan and 2035 emissions reduction targets must be backed up by strong supporting policies and capacity building programs at all levels of government, to enable an efficient and effective economic transition. Expediting the built environment's decarbonisation is the foundation for our net zero transition, and ASBEC members look forward to working in partnership with the Australian Government to develop and deliver the sector plans to realise Australia's full decarbonisation potential.

If you have any further queries, please do not hesitate to contact me via 

Yours sincerely

  
Alison Scotland  
Executive Director

### Priority 1

- **Ensure that infrastructure emissions reduction strategies use a decarbonisation hierarchy when targeting priority areas for intervention and deploy strategies to address embodied, operational and enabled emissions.**

ASBEC's [Reshaping Infrastructure for a net zero emissions future](#)<sup>vii</sup> noted that infrastructure influences 70% of Australia's annual greenhouse gas emissions via:

- Embodied emissions: the material used in construction, as well as those from the construction process itself
- Operating emissions: the ongoing operation of infrastructure assets
- Enabled emissions: the activities enabled by infrastructure assets and use by end-users throughout an asset's life.

We already know how to reduce operational carbon in the built environment; however, we are yet to develop most of the solutions to cut down on embodied carbon. The built environment sector can do more, now, to tackle emissions under our control (design choices, procurement practices, construction methods) and consistently signal to our supply chain that carbon reduction is both necessary and urgent. ASBEC's Issues Paper, [Embodied carbon emissions in Australia's built environment](#)<sup>viii</sup> recommends using a decarbonisation hierarchy to prioritise actions by considering emissions at every stage – and generally the greatest emissions reduction opportunities can be realised at planning stage. This is consistent with the thinking outlined in Chapter 2 of the draft roadmap.

Infrastructure Australia's Embodied Carbon Projections for Infrastructure and Buildings report<sup>ix</sup>, finds that over the five years to 2026-27, construction activity will produce between 37 and 64 Mt of CO<sub>2</sub>e in upfront embodied carbon each year; a total of 247 Mt of CO<sub>2</sub>e over the period. Findings also show it is possible to achieve a 23% reduction in these emissions by switching to cleaner, market-ready building materials and technologies. Infrastructure Australia's report also provides a series of insights and recommendations to the Australian Government on lowering embodied carbon across the built environment:

- Providing education and training for professionals, trades and consumers, which focus on addressing carbon literacy, specification of low carbon products, and construction techniques with low carbon materials.
- Developing a nationally standardised embodied carbon measurement system to allow for consistent methods to collect, measure and assess data on embodied carbon.
- Developing a common national approach to drive sustained market demand for low carbon products and solutions through project guidance and fiscal incentives.
- Developing new methods for project delivery, which share risks and rewards for low carbon project outcomes.
- Driving greater national alignment on low carbon expectations through performance-based standards and specifications.

Some of the biggest leaps in decarbonising our supply chains will occur when demand for low-embodied-carbon materials and products is generated at scale via infrastructure projects and coordinated infrastructure policy. We commend the recent decision taken by Commonwealth, state and territory transport and infrastructure Ministers<sup>x</sup> to approve national adoption of the Embodied Carbon Measurement for Infrastructure: Technical Guidance<sup>xi</sup>. The policy and guidance, developed by Infrastructure NSW in collaboration with NSW Government agencies and industry, is an excellent example of coordinating government and industry efforts towards a common goal.

ASBEC is developing a Comprehensive Policy Framework for upfront embodied carbon over the next few months, with an anticipated release in October/November. We look forward to working with DITRCA,



DCCEEW, members of the Infrastructure Net Zero initiative and our own members to progress a roadmap of solutions across the built environment sector to support the consistent NABERS method of measurement.

## **Priority 2**

### **➤ Coordinate efforts across multiple sectors of the economy to address decarbonisation challenges.**

ASBEC commends DITRDCA's recognition that addressing decarbonisation for the transport and infrastructure sector requires a rethink in how our networks and systems are designed. We believe that a holistic approach is the best way to address decarbonisation challenges. Climateworks Centre notes that an integrated pathway to net zero emissions in transport **will** reduce more emissions more quickly, while also delivering positive transport, health and social outcomes<sup>xii</sup>.

ASBEC agrees that if we require consideration of emissions at the point that funding decisions are made – and if appropriate metrics and methods of verification are also put in place – there will be a profound impact on the way we procure, design and construct our built environment. This approach will encourage thinking and planning beyond a primary focus on electric vehicle (EV) uptake and look for ways to increasing the use of public transport, active transport and rail freight (A.K.A 'mode shift'), reduce travel activity where opportunities exist, and build less infrastructure where appropriate<sup>xiii</sup>. Rethinking transport sector emissions from a systemic point of view presents an ideal opportunity to not only decarbonise, but make our cities and communities more liveable, healthy, resilient and sustainable. We note that the Australian Government is also in a unique position to drive cross-sectoral decarbonisation outcomes via its national urban policy implementation.

ASBEC's [Unlocking the Pathway](#) report <sup>xiv</sup> finds that 100 percent electrification with renewable electricity is the lowest cost, fastest emissions reduction pathway for Australia's built environment. Achieving our national emissions reduction targets will rely on electrification of our buildings and communities, so planning for EV infrastructure must go hand in hand with planning the electrification of our built environment. ASBEC is working with the Australian Government and State and Territory Governments to develop a national plan for the electrification of buildings – but with this comes an added complexity around the use of EVs and the timing of charging to take advantage of renewable energy generation. For example, Green Building Council of Australia's "A practical guide to electrification – For existing buildings"<sup>xv</sup> and "A practical guide to electrification – For new buildings"<sup>xvi</sup>, highlight elements that must be taken into account when considering EV charging such as planning the availability and types of charging infrastructure, electrical system capacity and how EV charging infrastructure can be linked to renewable energy generation and storage as part of effective Consumer Energy Resources. Government coordination at every level will be key to this transition.

With the above in mind, we note that Table 1 (page 11) in the roadmap might therefore show an incomplete representation of how the transport sectoral plan connects with the other five sectoral plans. We would welcome the opportunity to work closely with the Australian Government to ensure these themes are addressed in a consistent and holistic way. Developing strategy, policies and regulations will be complex, but getting it right – and ensuring consistency across key national plans and strategies – will deliver huge benefits for our emissions reductions targets, our economy and our competitiveness, as well as improving a range of positive health and liveability outcomes.

## **Priority 3**

### **➤ Collaborate with governments, industry and the community providing support for net zero capacity-building, innovation and knowledge-sharing.**

To achieve the goal of an equitable, prosperous and net zero economy by 2050, Australia will need to ensure we have an appropriately sized and skilled clean economy workforce within the next few decades. As decarbonisation strategies are implemented across the economy, there is a need to make sure that an adequately skilled workforce is able to be deployed to critical areas of the transition. The Australian

Government has a role to play in continuing to understand workforce needs and by ensuring skills development programs are directed towards meeting the needs of this net zero transition.

We note that the Infrastructure Net Zero initiative is transitioning across to ASBEC and one of its current projects is tasked with identifying shortages in emerging skills and occupations needed to plan, construct, install, operate and maintain the 2030 infrastructure pipeline in a net zero compatible way. We look forward to working collaboratively with our government and industry partners to analyse these skills and occupational gaps and develop potential options to address them.

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<sup>i</sup> [https://www.asbec.asn.au/membership/current\\_members/](https://www.asbec.asn.au/membership/current_members/)

<sup>ii</sup> <https://www.asbec.asn.au/research-items/investing-in-cities/>

<sup>iii</sup> <https://www.asbec.asn.au/research-items/low-carbon-high-performance-report/>

<sup>iv</sup> <https://www.asbec.asn.au/research-items/bang-buck-delivering-better-business-cases-realise-value-infrastructure-investments/>

<sup>v</sup> <https://www.asbec.asn.au/research-items/issues-paper-reshaping-infrastructure-for-a-net-zero-emissions-future/>

<sup>vi</sup> <https://www.asbec.asn.au/research-items/issues-paper-embodied-carbon-emissions-in-australias-built-environment/>

<sup>vii</sup> <https://www.asbec.asn.au/research-items/issues-paper-reshaping-infrastructure-for-a-net-zero-emissions-future/>

<sup>viii</sup> <https://www.asbec.asn.au/research-items/issues-paper-embodied-carbon-emissions-in-australias-built-environment/>

<sup>ix</sup> <https://www.infrastructureaustralia.gov.au/embodied-carbon-projections>

<sup>x</sup> <https://www.infrastructure.gov.au/sites/default/files/documents/itmm-communicue-7-june-2024.pdf>

<sup>xi</sup> <https://www.infrastructure.nsw.gov.au/media/ak2o0bqg/decarbonising-infrastructure-delivery-measurement-guidance.pdf>

<sup>xii</sup> <https://www.climateworkscentre.org/project/transport-pathways-to-net-zero/>

<sup>xiii</sup> <https://www.climateworkscentre.org/resource/decarbonising-australias-transport-sector-diverse-solutions-for-a-credible-emissions-reduction-plan/>

<sup>xiv</sup> <https://www.asbec.asn.au/research-items/unlocking-the-pathway-why-electrification-is-the-key-to-net-zero-buildings/>

<sup>xv</sup> <https://gbca-web.s3.amazonaws.com/media/documents/electrification-guide---existing-buildings-final.pdf>

<sup>xvi</sup> <https://gbca-web.s3.amazonaws.com/media/documents/a-practical-guide-to-electrification.pdf>