Transport and Infrastructure Net Zero Consultation Roadmap

Take the survey

Department of Climate Change, Energy, Environment and Water

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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
AfPA

4 Confirm that you have read and understand this declaration.
Yes

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Tony

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9 Who are you answering on behalf of?

Organisation

10 Organisation name

Australian flexible Pavements Association (AfPA)

11 What best describes you or your organisation?

Industry

12 What sector do you represent?

Infrastructure

13 What state or territory do you live in?

Victoria

14 Postcode

3127

15 What area best describes where you live?

City

16 1. Do you support the proposed guiding principles?

Yes

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?

Yes

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?

Yes

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?

inclusion of e-scooter that facilitates integration into the transport modes/mix

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?

more use of rail as a hub, and decarbonsiation of rail transport through hydrogen as fuel or other low carbon options

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.

1: Hydrogen fuel cell
2: Battery electric
3: Low carbon liquid fuels

33 10.1 Please add details to your response. Why did you rank them in that order?

not sure of timeframes and capability of electric battery technology for long haul heavy

loads. Impacts on road networks could also be significant due to weight. Low carbon fuels feels like a transition option to diesel until the others come up to the mark

34 11. What role should low carbon liquid fuels play in the heavy vehicle decarbonisation?

as above

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.

1: Hydrogen fuel cell
2: Low carbon liquid fuels
3: Battery electric

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

Hydrogen offers lower carbon than LC fuels, and with refilling infrasrtucture seems best suited for regional rail. Batteries would need to be massive and would be extraordinarly heavy, and have swap out arrangements to quickly replace. They may be suitable for city commute trains but even then the weight issue is problematic to say the least (as it will be for heavy trucks) . LC fuels work as exisiting infrastructure can support. Hydrogen gives better carbon outcome (maybe).

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

as above. A good idea for regional rail and compatible with existing infrastructure. The fuel source could compete with other uses - like agricultural land, but I feel that can be overcome. It's a safer bet than green hydrogen as the tech is not as unknown. Would be a good transition fuel whilst hydrogen is being developed and/or battery tech improves

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?

Total separation of rail and road (e.g. Level crossing removals). A faster to market approvals pathway for innovative, low carbon infrastructure solutions, evryhting from rail corridor infrastructure to stations adn facilities

42 16.1 How would these actions address the identified challenges and opportunities to reduce rail emissions?

lower carbon infrastrucutre construction

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?

Yes

52 21.1 Please add details to your response.

Low carbon infrastructure that builds in longer term resilience, inclusive of maintaining our vital rural and regional road arteries that connect communities and industries

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?

Extending life and planning for reuse will significantly reduce carbon cost of transport infrastructure. The Circular Economy approach is the key

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?

Using Industry Associations and providing support to deliver deliberate and intentional action on initiatives

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?

Using recycled materials in infrastructure maintenance and build. e.g. mandating rubber from tyres in asphalt

60 26. What measures and metrics should be used to evaluate the final Transport and Infrastructure Net Zero Roadmap and Action Plan?

Provide procurement guidelines that drive outcomes and require measurement and reporting in project delivery

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

240802 AfPA Net Zero Inquiry Submission.docx

69 Upload a submission

Not answered

70 Upload supporting file

Not answered

71 Upload supporting file

Not answered

AUSTRALIAN FLEXIBLE PAVEMENT ASSOCIATION

Transport and Infrastructure Net Zero Consultation Roadmap

2024

ABOUT AfPA

The Australian Flexible Pavement Association (AfPA) is the peak industry body representing the $27 billion flexible pavement industry. It delivers safe and sustainable outcomes that benefit communities across Australia.

For over 50 years, AfPA has brought together our dynamic and multifaceted industry that is responsible for the design, specification, manufacture, construction, and maintenance of all forms of bituminous flexible pavements.

AfPA's members constitute a diverse array of professional organisations that support the industry and are passionately committed to advancing flexible pavement technology for the benefit of the road user and the broader community.

AfPA members include bitumen suppliers, asphalt producers, sprayed surface operators, major consultancies, suppliers (such as equipment providers, line markers and profiler contractors), all Government Road Authorities, and many Local Governments from across Australia.

AfPA's vision embodies three key objectives:

- To support industry be healthy, safe, innovative, and adaptive to change, acting as a platform for industry sustainability.
- To support the national harmonisation of best industry practices, promoting the benefits of flexible pavement.
- To drive a national culture of continuous improvement in infrastructure.

AfPA welcomes the opportunity to make a submission to the Federal Government's Transport and Infrastructure Net Zero Consultation Roadmap**.** We are firmly committed to working with all levels of Government towards building a stronger, more sustainable infrastructure future to support the current and future needs of our nation.

FLEXIBLE PAVEMENT INDUSTRY SNAPSHOT

Australia's roads are the critical infrastructure that logistically connects us and ensures our basic functionality as a society. Across all aspects of our day-to-day lives, roads bring us together, facilitating all functions of our social fabric and economic activities. Their ongoing viability, level of service, and safety are entirely dependent on the significant contributions of all levels of Government to new projects and the maintenance of the existing network, and equally, a skilled, competent workforce to deliver on these commitments.

AfPA recognises that key areas for achieving net zero include enhancing road resilience in the face of climate change and extreme weather events, and utilising innovative, low carbon materials and solutions to achieve net zero emissions across both metropolitan and rural networks.

A core component of maintaining existing networks is road resilience, which is defined by the US Federal Highway Administration (FHWA) as the ability to anticipate, prepare for, and adapt to changing conditions, as well as to withstand, respond to, and recover rapidly from disruptions. Equally crucial is sustainability and the use of viable, modern materials for roads to ensure that the industry meets modern standards of technology, and continually reduces the carbon impact of pavement infrastructure construction and maintenance. Integrating innovative materials and sustainable practices into road construction and maintenance will not only enhance the durability and performance of our roads but also minimise environmental impact, contributing to a more sustainable future. This includes designing, constructing, and maintaining pavements for long life and reuse of end-life pavement materials.

Australia's expansive road network stretches for over 817,000 kilometres. Of this, approximately 40% are sealed and 60% are unsealed. The size of the existing road network, paired with Federal and state government investment, means Australia's road network will face even greater expansion over the coming decades.

Transport is currently the third-largest source of greenhouse gas emissions in Australia, accounting for 21% of the nation's emissions in 2023, with the construction industry contributing up to 10%. We support an industry transition to reduce the carbon footprints of roads, transport, and infrastructure to help meet Australia's net zero by 2050 decarbonisation targets. Sustainable efforts will not only benefit communities but also bring innovative approaches to infrastructure that are economically viable and improve the industry.

Our industry members note the importance of the Australian Government prioritising the safety, sustainability, and seamless connectivity of the nation's rural and regional road network. There is an ongoing, urgent need to bridge the road maintenance service gaps and failures that disproportionately affect regional and remote communities.

COLLABORATION WITH GOVERNMENT

Increasing open discussions around circularity and sustainability in the roadwork and flexible pavement industry are vital. So too is collaboration between industry, agencies, and government to ensure that road networks play a key role in Australia's transition to net zero.

Achieving 2030 and 2050 goals will rely on a ‘whole of industry’ approach, where incremental and strategic improvements in operations will collectively contribute to our greenhouse gas reductions. Furthermore, we will need to leverage existing technology, accelerate innovation, and engage with our upstream and downstream stakeholders to incentivise the adoption of sustainability and utilise wider government initiatives to deliver broader technological advancements across other sectors that will contribute to reducing our impact/contributions to emissions.

By working together, we can integrate sustainable, unified practices into the roadwork and transport industry, fostering long-term resilience, productivity, and competitiveness. This partnership is crucial not only in metropolitan areas but also in rural networks, ensuring that all communities benefit from sustainable infrastructure.

In particular, AfPA welcomes the opportunity for continued collaboration with the Government to develop industry-driven solutions that address the net zero challenge. A focus on rebuilding and revitalising rural and regional roads to build long-term resilience and lower carbon impacts will also support healthy and local economies.

DECARBONISING OUR INDUSTRY – AUSTRALIA'S ROAD TO NET ZERO

Australia's road network connects communities and facilitates the supply of essential goods and services. However, it is increasingly stressed by climate change and severe weather events, and maintenance funding constraints, leading to significant deterioration.

AfPA, through its members, is dedicated to maintaining and improving the fabric of our road network, reducing the carbon footprint of the road industry, integrating circular economy practices, and driving sustainable operations to meet the 2030 and 2050 environmental targets. We strongly support the Federal Government's ambitious goals of Net Zero by 2050 and reducing emissions by 43% below 2005 levels by 2030.

We are eager to collaborate with the Federal Government and its departments to align our industry's circular and sustainable objectives with these targets. We advocate for federal funding through local governments to promote circularity in road maintenance, as maintaining existing roads provides significant environmental benefits compared to constructing new ones. By prioritising sustainable funding and maintenance, we not only support local communities but also contribute to reducing Australia's carbon footprint while meeting the needs of evolving industries.

Circularity in Maintenance

Road maintenance projects provide far greater environmental benefits compared to the construction of new roads and ultimately support the reduction of Australia's carbon footprint. This is achieved by encouraging the reuse of existing construction waste and other recycled materials into maintenance road projects and is a practical way that industry is delivering on the circular economy.

Far too often, the announcement of new projects and roads is deemed more favourable and attractive to governing authorities than the upkeep and service of existing ones. AfPA contends that this approach doesn't necessarily result in the best outcome for all by not just leading to deteriorating road networks but also contributing to the use of excess materials and increasing waste.

Roads and the Environment

With the expectation of increasing climate change induced severe weather events, and the evidence of natural disasters in recent years, the reliability of our road network across Australia is increasingly essential in responding and equally under threat.

Rural and Regional Communities

To achieve net zero targets, it is crucial for the road sector to address the significant maintenance needs of rural and regional networks as well as those of major infrastructure projects. Rural communities are disproportionately impacted by road maintenance funding shortfalls and infrastructure damage, highlighting the necessity for targeted support and investment. Maintaining and repairing existing roads in these areas is notably less carbon-intensive compared to constructing new projects.

Ensuring that rural roads are stable and incorporating net-zero technologies is critical for supporting these communities through the transition to a low-carbon economy. By investing in the sustainability of rural road networks, we can support emerging industries and local economies, and ensure that all communities benefit from advancements in clean technology and sustainable infrastructure.

AfPA recommends the Government to:

- Promote and support innovative designs and solutions, including those that enhance the life cycle, renewability and sustainability of road infrastructure.
- Ensure that the Government continues to support the industry in utilising low carbon and renewable materials with sound engineering properties that benefit and improve road performance to help address a growing national circular economy challenge.
- Encourage the Government to use low carbon and recycled materials in its procurement practices, particularly ensuring consistency in the interpretation of requirements between policy and compliance.
- Encourage the Government to continue to keep Australia's most crucial asset, its roads, at the forefront of resilience to natural disaster events, ensuring that the nation's roads continue to act as a crucial lifeline to all communities. This means adopting a routine, healthy pipeline of maintenance and upkeep work to ensure that full capacity is upheld year-round.
- Call for the extension and expansion of initiatives that work to address dangerous, poorly maintained roads that disproportionately affect rural communities. For regional communities, a well-maintained road is a safe road for all.

Key Areas for Road Pavements to Achieve Net Zero:

The two key focus areas in achieving net zero in road pavement construction and maintenance are:

- Road Resilience: Ensuring our road infrastructure is resilient to climate change and extreme weather events, providing longer-lasting, more effective road pavements.

- Low Carbon Materials: Utilising innovative, circular (recycled, reused, repurposed) and low carbon materials and solutions

To address these two areas, it is proposed that AfPA should collaborate with the Government and other authorities, industry associations and organisations with suitable subject matter expertise to:

1. Standards and Specifications: Streamline pathways for innovative and developing low carbon and circular materials to be adopted into standards and specifications.
2. Carbon abatement potential: Undertake a study to determine carbon abatement potential across the life cycle of alternative pavement maintenance and other treatments.
3. Procurement Guidelines: Developing and implementing standardised guidelines that drive sustainable behaviour and support accurate and timely measurement and reporting of carbon abatement outcomes.
4. Shifting Perspectives: Provide education and awareness to the industry to overcome inertia, and shift towards sustainable and circular practices being more readily adopted in road construction and maintenance.
5. Progressing the Supply Chain: Ensuring that the entire supply chain, including asset owners, contractors, designers, and manufacturers, align with evolving industry standards.

Example of decarbonisation success in the asphalt industry

AfPA's goal is to **translate low carbon and circular economy principles into delivered practical outcomes**. Examples of direct actions to be embraced by the AfPA members are included below:

- The Australian asphalt industry is a leader in the reuse and recycling of materials and is continually advancing the use of *Reclaimed Asphalt Pavement* (*RAP*), which is 100% reusable as asphalt, reducing waste and the need to disturb the natural environment in pursuit if new raw materials. Importantly, the bitumen recovered in this process is "free", improving the cost-effectiveness of our assets and reducing the need for the importation of this crude oil derivative.
- Exploring and adopting biogenic bitumen sustainably derived from non-oil-based sources.
- Utilising crumb rubber from waste tyres as an additive to bitumen that enhances performance and life span and reduces waste to landfill and stockpiling of end-of-life tyres.
- Industry can reduce asphalt mixing temperatures by expanding the use of currently available technologies reducing GHG emissions, providing improved moisture control and other carbon lowering options.
- AfPA has introduced a **world-first sustainability assessment framework** for asphalt plants that will reduce direct GHG impact through mandated evaluation of operational efficiency and use of circular secondary materials, thereby continually raising industry standards.
- Progressing sustainable energy supply options through selecting renewable energy sources for fuel required/used across fixed and mobile plant operations and offices. Transition to renewable electricity for on-site sources and external providers in support of net zero carbon electricity generation and consumption.
- The asphalt industry can contribute to a net zero target through:
    - Working with pavement asset owners to procure improved pavement solutions that result in increased quality and durability of pavement materials.
    - Engaging with asset owners and associated agencies to remove barriers to improvements by continually updating specifications, championing innovation and encouraging increased efficiency.
    - Progressively procuring from as well as encouraging and incentivising suppliers to improve their products and services, such that the industry will have established net zero supply chains by 2050.
- We champion the importance of environmental sustainability across the flexible pavement industry, and the opportunities to drive sustainability in road maintenance work. The need for Australia to shift to circular economy practices has never been clearer, and the flexible pavements industry is well positioned to do its part to ensure this sustainability objective is achieved.

ROADS SYNONYMOUS WITH SUSTAINABILITY -

COLLABORATION WITH COUNCILS IN AUSTRALIA'S LARGEST RECYCLED RUBBER ASPHALT PROJECT

In an Australian first, AfPA partnered with industry bodies and 12 Sydney Metropolitan Councils in the largest crumbed rubber asphalt demonstration project in Australia. The Project represents a remarkable opportunity to transform Australia's road infrastructure while promoting sustainable waste management practices.

By introducing crumb rubber, derived from recycled tyres, into the bitumen used for road construction, the project aims to achieve remarkable improvements in road longevity, reduced maintenance costs, and a significant contribution to environmental sustainability. This approach not only enhances the performance and durability of roads but also fosters responsible waste management by repurposing discarded tyres that would otherwise end up in landfills.

The project's implementation is a collaborative effort involving key stakeholders such as AfPA, Tyre Stewardship Australia, Boral, and the Southern Sydney Regional Organisation of Councils (SSROC). This partnership ensures a diverse range of expertise, resources, and perspectives are brought together to support the project's successful execution.

In terms of material provisions, the initiative will deliver 2000 tonnes of sustainable pavement material, created through the incorporation of crumb rubber and including RAP and other recycled materials, and an additional 1200 tonnes of “conventional” control asphalt mix. These materials have been applied across various local Sydney council streets, serving as tangible evidence of the project's viability and impact.

The involvement of 12 Sydney Metropolitan Councils, including Bayside Council (NSW), Burwood Council, City of Canada Bay, City of Canterbury Bankstown, City of Sydney, Georges River Council, Inner West Council, Randwick City Council, Sutherland Shire Council, Waverley Council, Woollahra Municipal Council, and Northern Beaches Council, showcases the broad geographic reach and potential scalability of this initiative. Each participating council demonstrates a shared commitment to sustainable development and recognises the immense benefits of integrating crumbed rubber asphalt into their road construction practices.

AfPA strongly urges the Government to consider the significance of this project and its alignment with its infrastructure objectives. By providing support and funding, the government can help drive further research, development, and scaling of crumbed rubber asphalt technology, enabling its adoption on a broader scale. Incorporating this innovation into the national infrastructure investment agenda will reinforce Australia's commitment to sustainable, credible, and nation-building practices while delivering substantial benefits to our communities and the environment.