

# 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:

August 15, 2024 at 12:13 PM GMT+10

Response ID:

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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  
National Heavy Vehicle Regulator
- 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  
National Heavy Vehicle Regulator
- 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?  
Queensland
- 14** Postcode  
4006
- 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

NHVR\_Submission\_outgoing\_submission\_to\_DITRDCA\_Transport\_and\_Infrastructure\_Net\_Zero\_Consultation\_Roadmap.86b3cb19\_Redacted.pdf

69 Upload a submission

Not answered

70 Upload supporting file

Not answered

71 Upload supporting file

Not answered



# NHVR Submission: Transport and Infrastructure Net Zero Consultation Roadmap

Submission to the Department of Infrastructure, Transport, Regional Development, Communications and the Arts (the Department)

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July 2024

## Introduction

The National Heavy Vehicle Regulator (NHVR) welcomes the opportunity to provide feedback on the Transport and Infrastructure Net Zero Consultation Roadmap (the Roadmap) prepared by the Department of Infrastructure, Transport, Regional Development, Communications and the Arts (the Department).

The NHVR supports the decarbonisation of the heavy road transport sector as an avenue to reducing the environmental and amenity impacts that the sector has on the Australia community. Progress towards decarbonisation offers real opportunities for the heavy road transport task to be delivered in a cleaner way. The technologies used as part of this process will benefit the community in other ways, such as reducing noise impacts. New heavy vehicle designs also present other potential benefits for the sector such as reduced operating cost through simpler maintenance requirements and lower recharging/refuelling bills. Finally, the addition of more advanced safety features in these next generation heavy vehicles will have a positive influence on reducing road trauma.

As such, the NHVR is a strong advocate of the Department's policies to decarbonise the transport and infrastructure sectors and notes the significant efforts made by the Department so far in developing its Net Zero plan.

The NHVR will continue to contribute to and support State and Commonwealth government plans to achieve targeted emission reductions by 2030 and strategies to achieve net zero by 2050.

To assist in identifying and implementing the actions necessary to reduce transport and infrastructure emissions, the NHVR provides the following submission to the Roadmap, particularly focusing on the movement of goods and people by heavy vehicles.

Specifically, the key areas addressed in this submission relate to:

- Proposed streams of work in the decarbonisation program.
- The need for more emphasis on heavy vehicle passenger transport.

For further information, please contact Mr Peter Austin, Director, Policy Implementation at [REDACTED].

## About the NHVR

The NHVR is Australia's dedicated statutory regulator for all heavy vehicles over 4.5 tonnes gross vehicle mass or aggregate trailer mass.

The NHVR was established in 2013 as a statutory authority pursuant to the Heavy Vehicle National Law.

### Our Purpose

We provide leadership to, and work collaboratively with, industry and partner agencies to drive sustainable improvements to safety, productivity and efficiency outcomes across the Australian heavy vehicle road transport sector.

### Our Vision

Delivering safe, efficient and productive heavy vehicle movements supporting a strong and prosperous Australia.

### Our Mission

Through leadership and advocacy, we administer a national statutory system to deliver streamlined regulatory services and administration to the heavy vehicle road transport sector, minimising regulatory burdens while fostering greater safety and productivity.

## Work to support heavy vehicle decarbonisation

The NHVR has been working in partnership with the Commonwealth and other government agencies to support the uptake of low and no emission heavy vehicles. This includes:

- Undertaking significant industry engagement to understand the current and future industry direction for reducing carbon emissions.
- Releasing the first [Future Heavy Vehicle Roadmap](#), a forward looking environmental scan that identifies low and no emission technologies available or under development, identifies regulatory and other barriers that may slow or prevent the uptake of these vehicles, and suggests a prioritised approach to how these barriers should be addressed.
- Supporting the development and implementation of low and no emission heavy vehicle access schemes in participating jurisdictions. With first generation schemes now implemented, the NHVR will continue to work with States and Territories to identify opportunities to improve the consistency of these schemes and to expand the schemes to cover a broader range of vehicle categories.
- Developing and releasing vehicle comparison tools, such as Freight PASS, that allow operators to compare the efficiency and environmental impacts of different vehicles and combinations and compare them to other vehicles or combinations. This enables informed vehicle selection and supports operators to undertake their road transport task in the most efficient and environmentally informed way.
- Developing and releasing improved mapping products that provide national level information on authorised vehicle routes, supporting operators to undertake their road transport task in the most efficient and environmentally informed way.

## Response to Questions

### Part 3.2: Road – heavy vehicles

#### Question 9: Do you agree with the proposed net zero pathway for heavy road vehicles?

##### a) Adoption of vehicles

The net zero pathway for heavy road vehicles indicates that the period from 2024 to 2030 will see demonstrations of battery electric vehicles (BEV) and hydrogen fuel cell electric vehicles (FCEV) (also refer to diagram on page 7 of the Roadmap).

It is important to clarify that while the above description for FCEVs is correct, BEVs have already commenced adoption within Australia both for rigid trucks, prime movers and low floor passenger buses operating in urban areas.

The escalated adoption of BEVs in the period up to 2030 will therefore necessitate an adjustment to the rollout of the 2030-2040 requirements for infrastructure (e.g. charging and refuelling infrastructure).

##### b) Decarbonisation approach

The NHVR considers there to be three streams of work for the decarbonisation of heavy vehicles:

Stream 1: New Zero Emission Vehicles

Stream 2: Reduction of carbon intensity

Stream 3: Hard to offset sectors - low carbon liquid fuels (LCLFs)

While the Roadmap considers stream 1 and 3, the NHVR believes that it should also consider stream 2. It appears that vehicles that are not new have been grouped into the third category of being offset by Low

carbon liquid fuels (LCLF) which fails to recognise the importance of the existing heavy vehicle fleet in meeting reduction targets.

The NHVR considers that the three streams would also function as a maturity model for heavy vehicles, where vehicles that start in stream 3 should in time shift to stream 2 and then stream 1. A vehicle in stream 3 may even jump to stream 1 with the evolution of technology.

The following are explanations of the NHVR's proposed streams 1 through to 3:

### ***Stream 1: New Zero Emission Vehicles***

New heavy vehicles will play a key role in the decarbonisation program. Heavy vehicles have a typical life cycle that starts with a larger operator purchasing a new vehicle. Once the vehicle reaches approximately 2-5 years in age, it is then sold to other operators of a smaller size, or an operator who will use the vehicle in a limited manner.

Supporting the adoption of low and zero emission heavy vehicles at the new vehicle stage ensures that this lifecycle is not broken. A progressive ramping up of new low and zero emission heavy vehicle adoption will also provide the necessary upskilling of ancillary industries that will need to transition to support these future heavy vehicles (e.g. mechanics).

### ***Stream 2: Reduction of carbon intensity***

The average age of the heavy vehicle fleet in Australia is just over 15 years, meaning that from its purchase date, a vehicle could reasonably have a 30-year life. As the global market only has a limited capacity to build and supply heavy vehicles, it is not possible for operators to replace all their heavy vehicles with new vehicles at once and in a relatively short timeframe.

The NHVR considers that further planning is required to reduce the carbon intensity of the existing heavy vehicle fleet to reach the goal of decarbonising the transport and infrastructure sectors. The NHVR believes that solely relying on LCLFs to achieve this reduction is too limiting and potentially risky in that it exposes the net zero pathway for heavy vehicles to strategic risks such as supply problems, global unrest etc. To assist in meeting the above challenges, the NHVR poses the following questions for the Department's consideration:

1. How do we retire the oldest vehicles in the fleet or move them to very low use applications?
2. What alternate or hybrid technologies exist that may allow us to reduce emissions? (e.g. natural gas systems or hybrid-hydrogen technology that reduces emissions, supports other fuel types that form part of the broader energy transition).
3. How can we transport more road freight for a lower amount of carbon (higher productivity vehicles such as performance-based standards vehicles)?
4. How can we support other more carbon-efficient modes of transport, such as rail, where it is commercially viable and shift freight from road to these greener modes?

### ***Stream 3: Hard to offset sectors***

The NHVR considers that, in relation to heavy vehicles, stream 3 should be the starting point from which vehicles should move up the streams. While it may be hard initially to decarbonise the heavy vehicle industry, as technology matures, vehicles could move from a complete LCLF solution to a carbon intensity reduction solution; they could then eventually become zero emissions vehicles. We acknowledge that for some time, decarbonising certain heavy vehicle sectors (such as the long-distance multi-combination freight, heavy haulage (OSOM) etc.) is likely to be difficult and LCLFs are likely to continue to play an important role for some time to come. For these applications, the NHVR supports further funding and investment.

**Question 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.**

In relation to heavy vehicles, the Roadmap should consider or acknowledge the role that other emerging low-emission technologies will play, such as the hydrogen internal combustion engine (H<sub>2</sub>-ICE) or heavy vehicles that run on natural gas. These options should be considered further in the various technologies and fuels that could contribute to decarbonising heavy vehicles, as they produce ultra-low emissions.

These technologies also present a potential opportunity to ensure the commercial viability of other efforts to reduce emissions in different parts of the economy. For example, H<sub>2</sub>-ICE solutions may increase the size of the H<sub>2</sub> market, making the sector commercially viable sooner and encouraging the generation of H<sub>2</sub> and the rollout of commercial refuelling locations. Similarly, the use of natural gas by heavy vehicles could maintain the demand for this fuel in the future as other uses for it reduce, complimenting the government's current position on the use of natural gas as a firming feature of the future of the nation's electricity networks.

**Question 11: What role should low carbon liquid fuels play in heavy vehicle decarbonisation?**

As mentioned previously, the NHVR acknowledges that for some time, decarbonising certain heavy vehicle sectors (such as the long-distance multi-combination freight, heavy haulage (OSOM) etc.) is likely to be difficult and LCLFs are likely to continue to play an important role for some time to come.

The NHVR also acknowledges that while technology develops that assists in the reduction of the carbon intensity of the current heavy vehicle fleet, LCLFs will play a role in emissions reduction. The NHVR believes that over reliance on LCLFs to achieve carbon reduction is too limiting and potentially risky in that it exposes the net zero pathway for heavy vehicles to strategic risks such as supply problems, global unrest etc. This risk could be addressed by supporting an additional stream of work focused on reducing the carbon intensity of the road transport task in a technology-agnostic way.

**Question 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?**

The NHVR is of the view that while the Roadmap considers active and passenger transport, such as buses and coaches, this sector could be considered in more detail. While the electrification of passenger transport buses is one step, consideration needs to be given to improving passenger transport efficiency. Some recent examples of this include projects such as the Brisbane Metro (QLD) and City of Sterling's (WA) trackless trams. These solutions, which have been operating internationally for some time, are novel here in Australia but present a real opportunity to address emissions and carbon production in our heavily populated urban centres.

It is also worth noting that accelerated transition of this sector is possible given the level of public funding which is not present in many other sectors, such as road freight.

## Conclusion

The NHVR commends the Federal Department on their work towards building the foundation that will support the decarbonisation of the heavy road transport task.

The NHVR supports a modified approach to the proposed net zero pathway for heavy road vehicles, where the Roadmap takes into consideration how to reduce the existing heavy vehicle fleet's carbon footprint beyond relying on LCLFs. This includes funding and investment in other technologies that have a role to play in reducing sector emissions. The NHVR also supports closer examination of the role of active and passenger transport in improving passenger transport efficiency and mitigating urban emissions.

As Australia's heavy vehicle regulator, we look forward to further opportunities to collaborate and contribute to the forthcoming actions that will help achieve our Net Zero targets and transform how we deliver goods and people around Australia.