

# 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  
Operating Heritage Australia
- 4 Confirm that you have read and understand this declaration.  
Yes
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Neil
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9 Who are you answering on behalf of?

Organisation

10 Organisation name

Operating Heritage Australia (the association of peak bodies representing 300,000 custodians of cultural heritage maintained in operating condition)

11 What best describes you or your organisation?

Other: "Heritage preservation - historic vehicles"

12 What sector do you represent?

Maritime

Rail

Heavy road vehicles (trucks, buses etc.)

Light road vehicles (cars, utes etc.)

All transport

Other: "Preservation and operation of historic vehicles"

Infrastructure

13 What state or territory do you live in?

New South Wales

14 Postcode

2075

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.  
Principles are very broad and don't warrant further comment.
- 18** 2. Do you support the use of the avoid-shift-improve framework as a tool to identify opportunities for abatement?  
No
- 19** 2.1 Please add details to your response.  
The framework does not address the needs of the heritage sector.  
The aim of this sector is not the utilitarian movement of people or freight from one place to another.
- The custodians of existing historic vehicles maintain them to experience (movement, sight, sound, smell, feel and sometimes taste) Australia's technological cultural heritage and to share the experience with current and future generations.
  - The aim is not to avoid use or replace it with public transport.
  - Electrification of existing historic vehicles in whatever form is not practical and would destroy their heritage significance
  - The sector needs to obtain reliable sources of suitable renewable replacement fuels to enable the continued operation of these historic vehicles
- 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?  
Custodians of historic vehicles are seeking a solution which allows them to continue to

operate their culturally significant vehicles while achieving net zero emissions. Active and public transport is not an option for this sector.

- 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?

No

- 27 7.1 Please add details to your response.

Battery electric and hydrogen fuel cell conversions are not suitable for existing historic vehicles. It is not practical and would destroy heritage significance.

Low Carbon Liquid Fuels offer a viable alternative for existing historic vehicles

- 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?

Support LCLF development, production and distribution for historic vehicles

- 29 8.2 How would these actions address the identified challenges and opportunities to reduce light vehicle emissions?

Allow custodians of historic vehicles to continue to operate them in a net zero carbon way.

- 30 9. Do you agree with the proposed net zero pathway for heavy road vehicles?  
No
- 31 9.1 Please add details to your response  
Battery electric and hydrogen fuel cell conversions are not suitable for existing historic vehicles. It is not practical and would destroy heritage significance.  
Heavy vehicles are a relatively small group within the heritage sector. Low Carbon Liquid Fuel (diesel) is viable and its development, production and distribution are supported.
- 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: Low carbon liquid fuels
- 33 10.1 Please add details to your response. Why did you rank them in that order?  
Only low carbon liquid fuels are viable for existing historic vehicles
- 34 11. What role should low carbon liquid fuels play in the heavy vehicle decarbonisation?  
LCLFs will be required in the long term for existing historic vehicles
- 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?  
Support LCLF development, production and distribution
- 36 13. Do you agree with the proposed net zero pathway for rail?  
No
- 37 13.1 Please add details to your response.

There has been no consideration given to coal replacement. Coal-powered heritage railways produce around 25,000 t CO<sub>2</sub>-e each year. Renewable alternatives are expensive and are not suitable for heavy-duty operation. Given the low volume it may be more practical to grant exemptions to heritage railways (as in the UK) or to employ high-quality carbon offsets.

LCLFs will be suitable for internal combustion-powered heritage railways.

- 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: Low carbon liquid fuels

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

These options alone will not be sufficient for heritage railways. Low carbon liquid fuels will be viable for internal combustion powered rail vehicles. A solution for coal-powered heritage railways must be found.

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

LCLFs will be suitable for internal combustion powered heritage railways

- 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?

Consider exemptions or carbon offsets or support for high quality carbon offsets for coal powered heritage railways

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

Allow heritage railways to continue to operate

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

No

- 44 17.1 Please add details to your response.  
There has been no consideration given to heritage maritime operators.  
Most larger historic boats use renewable fuel (wood for paddle steamers) and a small number use coal (around 100t per year) and oil. Smaller boats use liquid fuels.  
Hydrogen, hydrogen-derived fuels and electrification are not viable for historic craft.  
Low carbon liquid fuels are viable for smaller boats.
- 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?  
Support LCLF development, production and distribution  
Consider exemptions or carbon offsets for coal/oil powered heritage vessels
- 46 18.2 How would these actions address the identified challenges and opportunities to reduce maritime emissions?  
Allow historic watercraft to continue to operate
- 47 19. Do you agree with the proposed net zero pathway for aviation?  
No
- 48 19.1 Please add details to your response.  
There has been no consideration given to heritage aviation operators.  
Battery power and hydrogen conversion are not viable for existing historic aircraft.  
Low carbon liquid fuels are viable.
- 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.  
Historic aircraft fuel usage is a very small component of the aviation sector's usage and future fuel requirements are unlikely to have been considered.

- 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?  
Support LCLF development, production and distribution.  
Replacement fuel types are required for road motor vehicle petroleum and aviation gasoline
- 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?  
Ensure availability of low carbon options – for the heritage sector this will most likely mean the availability of low carbon liquid fuels throughout Australia
- 54 22.1 How would these actions address the identified challenges and opportunities to reduce transport infrastructure emissions?  
Provide cost-effective alternatives to fossil fuel that do not damage historic vehicles
- 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?  
Recognise that historic vehicles are part of Australia’s cultural heritage and that more than 1 million custodians and their directly involved family and friends want to maintain them in operating condition. Over 5 million visitors pay to experience operating heritage machinery.  
Electrification and hydrogen fuel cells are not suitable for historic vehicles.

A range of options needs to be available

- Exemptions or high-quality offsets for situations in which consumption is very low and no viable alternative exists – eg. coal, coke.
- Support for the development, production and distribution of low carbon liquid fuels.
- Willingness of legislators and regulators to embrace new technologies which are likely to emerge over the life of the roadmap

56 24. How should the use of low carbon liquid fuels (LCLFs) be prioritised across different transport modes over time to achieve maximum abatement?

The heritage sector, while a small contributor to total CO2 emissions is sufficiently large and is relatively price insensitive. It can provide an attractive market for LCLF producers and distributors. The sector is aware of international developments and seeks to support global initiatives to develop renewable fuels for the heritage vehicle sector.

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?

Involve the heritage sector in consultation. The heritage sector wants to move to renewable fuels when practical alternatives exist.

Engage with Operating Heritage Australia and operating heritage sector peak bodies to understand the needs of the sector and the opportunities available for all parties in the transition to renewable fuels.

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?

Various international LCLF developments – eg. Porsche synthetic fuel plant in Tasmania

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?  
There is no option in this survey for National organisations. Operating technological heritage objects are found in all states and city, regional and remote areas

- 63 28. Do you have any further feedback on the Consultation Roadmap and proposed pathways?

Be willing to embrace new technologies likely to emerge in the coming decades. The large range of technologies developed in the early 20th century to replace steam power suggests that there will be more than three technological pathways to a net zero future.

- 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

Net zero Survey Letter Final de-identified.pdf

69 Upload a submission

Not answered

70 Upload supporting file

Not answered

71 Upload supporting file

Not answered

## **Additional information to *Transport and Infrastructure Net Zero Consultation Roadmap Survey July 2024***

Neither the Net Zero Consultation Roadmap nor the on-line survey acknowledge the special needs of the historic vehicle sector in moving to a net zero future. This submission is presented as an introduction to this large and important sector and as a request to participate constructively in the process to achieve a net zero carbon future.

Operating Heritage Australia is a **national** association of peak bodies representing all types of operating technological heritage maintained in its original form and performing its original function. We work collaboratively with legislators, regulators and industry to ensure that Australia's cultural heritage is protected.

The Australian operating technological heritage sector comprises:

- Over 900,000 historic motor vehicles
- Over 3000 historic aircraft
- Over 200 historic powered rail vehicles
- Over 100,000 historic watercraft, portable and stationary machinery objects

These objects are part of **Australia's cultural heritage** and are an integral part of their communities throughout Australia.

- More than 1 million directly involved and caring custodians, family and suppliers located in all states and cities, and regional and remote areas
- Over 5 million visitors each year who attend events to experience the objects performing their original function
- Over \$3billion spent each year

All require fossil fuels

Although there are large numbers of vehicles, they are used infrequently and their total contribution to greenhouse gases is estimated to be less than 0.5Mt CO<sub>2</sub>-e, predominantly due to an estimated 150ML of liquid fuels (and small amounts of coal and coke). If replaced new-for-old and used like-for-like they would take over 40 years to "repay" the carbon generated in producing a new vehicle. Their embodied carbon is valuable.

- We support the transition to a net zero future and want to be included in the development of practical solutions.
- The transport technology pathways proposed in the strategy are not suitable for heritage vehicles (except one).
  - Historic vehicles are preserved to allow current and future generations to experience past forms of transport technology (sight, movement, sound, feel, smell).
  - Active transport, battery electric and hydrogen fuel cell conversion are not suitable as they do not preserve these experiences or the authenticity of the object.
- **Low Carbon Liquid Fuels (LCLFs) offer viable alternative fuels and lubricants**
  - The historic motor vehicle sector is a relatively price insensitive sector and offers a viable market for LCLF production and distribution. Limited trials in Europe have been encouraging.

- The users of solid fuels such as coal (predominantly tourist railways such as Puffing Billy and some boats) consume around 12,000t of coal each year. They have high overhead costs and are sensitive to fuel price. They could warrant exemptions for heritage usage or support to obtain high-quality carbon offsets.
- Operating Heritage Australia has partnered with the University of Canberra and Engineers Australia in a research project to obtain more information on
  - Current usage of fossil fuels and lubricants in the operating heritage sector (types and volumes).
  - Custodians' attitudes to low carbon options.
  - Potential suitable low carbon fuel technologies for heritage machinery.

Operating Heritage Australia will continue to work collaboratively to protect Australia's operational technological heritage and achieve a net zero carbon future.

Please contact [operatingheritageaustralia@gmail.com](mailto:operatingheritageaustralia@gmail.com) to advise ways in which we can participate.

Yours faithfully

Original signed on behalf of Operating Heritage Australia