Transport and Infrastructure Net Zero Consultation Roadmap

Take the survey

Department of Climate Change, Energy, Environment and Water

Response received at:
July 25, 2024 at 2:49 PM GMT+10

Response ID:
sbm2f7e5142c96ab9b3e04c3

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
NRMA Marine

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

5 First name
Sam

6 Last name
Giddings

7 Email
[redacted]

8 Phone

[redacted]

9 Who are you answering on behalf of?

Organisation

10 Organisation name

NRMA

11 What best describes you or your organisation?

Industry

12 What sector do you represent?

Maritime

Public transport

13 What state or territory do you live in?

New South Wales

14 Postcode

2000

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.

- NRMA Marine believe the Government should not let perfection obscure progress to ensure that commercial investment decisions can be made and resources allocated based on clear Government policy frameworks to reach maturity more quickly.
- Facilitation of a whole-of-government approach to Low Carbon Liquid Fuels (LCLFs) that addresses and supports everything from production, supply chain, and

implementation/use of LCLFs.

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?

- Active transport interfaces with public transport and the development of an appealing navigation of the 'first and last mile' is pivotal for both. As such, consideration of a national minimum standard /approach for the inclusion of active transport design requirements on public transport may be useful.

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?

Yes

44 17.1 Please add details to your response.

Hydrogen Supply Chain

- Yes, but the road map relies on LCLFs reaching commercial maturity, which at current rates will be limited to renewable diesel.
- While it mentions hydrogen, it fails to account for the significant benefit hydrogen will deliver in emissions reduction. Hydrogen and fuel cell technology should feature more in the roadmap, should be prioritised over renewable diesel and should be pursued more aggressively.
- Greater focus should be placed on green hydrogen as the solution for maritime emissions and how government can make green hydrogen more commercially attractive for all participants (producers, operators etc).
- Development of hydrogen bunkering facilities at all major Australian ports/cities with a maritime transport presence.
- Shipping ports are typically federal or state-owned assets and therefore ensures a lengthy planning and investment cycle for upgrades to bunkering facilities.
- A large proportion of berths for the Domestic Commercial Vessel (DCV) industry are privately owned and therefore there is a shrinking opportunity to ensure bunkering diversity for LCLFs and electricity in our major cities without major intervention or investment.
- Any plans for hydrogen should be linked to the National Hydrogen Strategy and aligned across all states and territories.
- The generation of hydrogen or LCLFs should occur close to ports to reduce transportation time and cost.

- Standards for hydrogen storage and bunkering should be considered for consistency in implementation, i.e. pressure, temperature, bunkering connection.

Technical

- A standards led approach is critical for charging infrastructure equipment across the industry (i.e. megawatt charging) – considerations should include standard plugs, weight limits, liquid cooled cables, health, safety & environment (HSE) considerations and supporting standard operating procedures (SOPs).
- The Australian Government needs to decide a clear direction on the approach for delivery for industries that cannot be electrified. To provide insurance for the future, the government should consider exploring hydrogen fuel cell or hydrogen combustion in parallel until technology maturity allows viability of a definite position and policy framework. This will encourage innovation and strong policy direction and settings for business to prove the most commercially viable option.

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?

Regulation & Regulators

- Review and mapping of interconnected regulations and standards to ensure unintended regulator burden (red tape) does not become a barrier to the adoption of emerging vessel technology.
- Updating the Australian Maritime Safety Authority (AMSA) Novel Vessel Policy Statement (NVPS) to allow development without the use of Classification Societies. At present the NVPS precludes investment and certification on 'novel' vessels with alternate fuels and as such the costs of deploying a reduced Greenhouse Gas (GHG) emissions vessel are commercially probative.

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

- The NRMA Marine team have invested time and money into research and development to reduce our emissions in our maritime operations. Our original plan to implement diesel-hydrogen hybrid propulsion on our public transport ferry fleet identified the following key challenges and limitations:

o There is a lack of maturity in the Australian hydrogen market, all producers are in the production establishment phase
o There are supply chain challenges in addition to a lack of provision of commercial quantities of hydrogen, placing fuel security at risk.
o There is only enough hydrogen production and supporting infrastructure (tube trailers) to fuel a single vessel in our current operations (where there is a total of 5 vessels operating at the AM and PM peak).
o Hydrogen is expensive for both parties – for vessel implementation, fuel procurement and supply.
o The Australian Maritime Safety Authority (AMSA) Novel Vessel Policy Statement (NVPS) places a significant burden on the design & approval process for alternate fuel technology, making it both complex and commercially unviable for industry.

- NRMA Marine believe the Government should not let perfection obscure progress to ensure that commercial investment decisions can be made and resources allocated based on clear Government policy frameworks to reach maturity more quickly.

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?

- Greater coordination between federal, state and local governments is required. For example maritime matters are regulated by a federal agency, however roads are regulated by state/territory governments as well as local councils. All levels of government must be involved to unlock the challenges with Low Carbon Liquid Fuels (LCLFs) in maritime and reduce the investment risk. Additionally, solving issues around the use of hydrogen in the road freight transport task will also have flow on benefits to the transportation of hydrogen to ports for use in maritime settings.

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?

Capability & Assurance

- Conduct an assessment and gap analysis of Australian-based technical capability and capacity to deliver the net zero pathway in a maritime context.
- There needs to be a trained assurance capability within Australia, to act on behalf of the Australian Maritime Safety Authority (AMSA) similar to current surveyors. The capability should be built to deliver certification training to enable a trained workforce to conduct survey and assurance activities for 'novel' vessels.

Manufacturing & Industrial

- Identification of key industrial sectors for the construction and maintenance of 'novel' vessels and their requirements.
- A standard fire rating and response to be battery fires (lithium) needs to be considered in a maritime context. The International Maritime Organisation are on the cusp of announcing a position and should be considered for adoption by AMSA.

Enabling Infrastructure

- State, territory and local governments need to identify and prioritise commercial wharfage and adjacent space for emerging vessel technology infrastructure.
- Public infrastructure planning is vital operating a battery-electric ferry. Top up charging while in service is required to maintain the duty cycle in a public transport setting. At present this is challenging without substantive investment in upgrading electrical supply on public wharves which are typically state-owned assets. Overnight berthing (when vessels are not in use) also require access to high power supply.
- The Australian Government should encourage state/territory governments to clearly show maritime operators fixed dates for the installation of alternate fuel bunkering infrastructure. Operators will not move or invest in projects without firm timelines.
- The Domestic Commercial Vessels (DCV) space lends itself to electrification, however the sequencing of unrelated investments across energy grids (poles and wires), wharf upgrades and the vessels themselves is a condition precedent to success. Driving towards DCV vessels having back up LCLFs or similar as alternate energy sources for vessel electric propulsion will afford two key benefits under the broad heading of "don't let perfect get in the way of better".
- Landside grid upgrades are required to support the electrification of the maritime industry, similar to the standalone grids powering public transport rail (train) infrastructure. In particular, to support the peak of services at any wharf location.
- The generation of power / electricity should be from a sustainable source and thus, investment into renewables to power the grid.

Commercial

- Investment cycles in maritime, both DVC and offshore, are of 25-40 years' duration and therefore need clarity from the policy framework to ensure confidence in returns across the life of the assets. It is a priority to have a long-term structure and clarity on policy framework as it is the cornerstone of unlocking investment.
- The continuity of public transport operations, and hence a city's economic output, in the event of a grid disruption should be considered.
- The policy should allow for early investment in vessels and part adoption of electric propulsion until the grid matures. "Don't let perfect get in the way of better" to reach maturity more quickly.
- There needs to be clarity of the taxation and wider financial constructs concerning the use of Low Carbon Liquid Fuels (LCLF) such that unintended consequences for the use of LCLF/bio-diesel yield best fuel tax credit position (i.e. an optimal commercial return of 20%).
- Ultimately maritime public transport vessel (ferry) operators are off takers of fuel and in public transport settings efficient operating costs does not provideany benefit to the operator. In an environment where the revenue is set by the state, and the costs compensated for an increase for unit fuel costs needs to be an agreed position with state governments who manage the contracts of public transport.
- Industry leaders should be selected and financially subsidised to be the early implementers of technology to meet timelines within the Net Zero roadmap.

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?

- The Australian Government should push for the introduction of 'template' legislation that can be applied uniformly across all jurisdictions where applicable. This partnership and collaboration approach has already been undertaken with some success with the establishment of the National Heavy Vehicle Regulator (NHVR).

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

Transport and Infrastructure Net Zero Consultation Roadmap_NRMA Marine - Final Submission 20240725.pdf

69 Upload a submission

Not answered

70 Upload supporting file

Not answered

71 Upload supporting file

Not answered

Final Submission – 25/07/2024

Transport and Infrastructure Net Zero Consultation Roadmap

https://workspace.internal.dotars.gov.au/sites/EXI/NZPR/Roadmap/Planning/Public Roadmap/Transport and Infrastructure Net Zero Consultation Roadmap

NRMA Marine

Section	Question
1.2 The approach (pg. 12-16)	*1. Do you agree with the proposed guiding principles?* *1.1. Please add details to your response.*
	• NRMA Marine believe the Government should not let perfection obscure progress to ensure that commercial investment decisions can be made and resources allocated based on clear Government policy frameworks to reach maturity more quickly. • Facilitation of a whole-of-government approach to Low Carbon Liquid Fuels (LCLFs) that addresses and supports everything from production, supply chain, and implementation/use of LCLFs.
	2. Do you support the use of the avoid-shift-improve framework as a tool to identify opportunities for abatement? *2.1. Please add details to your response*
2.1 Movement of people (pg. 22-27)	*3. Do you agree the development of a national policy framework for active and public transport will support emissions reduction?* *3.1. Please add details to your response.*
	4. What should be included in a national policy framework for active and public transport and how should it be developed?
	• Active transport interfaces with public transport and the development of an appealing navigation of the 'first and last mile' is pivotal for both. As such, consideration of a national minimum standard /approach for the inclusion of active transport design requirements on public transport may be useful.
	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?
3.4 Maritime (pg. 54-59)	*17. Do you agree with the proposed net zero pathway for maritime?* *17.1. Please add details to your response.*
	Hydrogen Supply Chain • Yes, but the road map relies on LCLFs reaching commercial maturity, which at current rates will be limited to renewable diesel. • While it mentions hydrogen, it fails to account for the significant benefit hydrogen will deliver in emissions reduction. Hydrogen and fuel cell technology should feature more in the roadmap, should be prioritised over renewable diesel and should be pursued more aggressively. • Greater focus should be placed on green hydrogen as the solution for maritime emissions and how government can make green hydrogen more commercially attractive for all participants (producers, operators etc). • Development of hydrogen bunkering facilities at all major Australian ports/cities with a maritime transport presence. • Shipping ports are typically federal or state-owned assets and therefore ensures a lengthy planning and investment cycle for upgrades to bunkering facilities.

- A large proportion of berths for the Domestic Commercial Vessel (DCV) industry are privately owned and therefore there is a shrinking opportunity to ensure bunkering diversity for LCLFs and electricity in our major cities without major intervention or investment.
- Any plans for hydrogen should be linked to the National Hydrogen Strategy and aligned across all states and territories.
- The generation of hydrogen or LCLFs should occur close to ports to reduce transportation time and cost.
- Standards for hydrogen storage and bunkering should be considered for consistency in implementation, i.e. pressure, temperature, bunkering connection.

Technical

- A standards led approach is critical for charging infrastructure equipment across the industry (i.e. megawatt charging) – considerations should include standard plugs, weight limits, liquid cooled cables, health, safety & environment (HSE) considerations and supporting standard operating procedures (SOPs).
- The Australian Government needs to decide a clear direction on the approach for delivery for industries that cannot be electrified. To provide insurance for the future, the government should consider exploring hydrogen fuel cell or hydrogen combustion in parallel until technology maturity allows viability of a definite position and policy framework. This will encourage innovation and strong policy direction and settings for business to prove the most commercially viable option.

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?

Regulation & Regulators

- Review and mapping of interconnected regulations and standards to ensure unintended regulator burden (red tape) does not become a barrier to the adoption of emerging vessel technology.
- Updating the Australian Maritime Safety Authority (AMSA) Novel Vessel Policy Statement (NVPS) to allow development without the use of Classification Societies. At present the NVPS precludes investment and certification on 'novel' vessels with alternate fuels and as such the costs of deploying a reduced Greenhouse Gas (GHG) emissions vessel are commercially probative.

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

- The NRMA Marine team have invested time and money into research and development to reduce our emissions in our maritime operations. Our original plan to implement diesel-hydrogen hybrid propulsion on our public transport ferry fleet identified the following key challenges and limitations:
    - There is a lack of maturity in the Australian hydrogen market, all producers are in the production establishment phase
    - There are supply chain challenges in addition to a lack of provision of commercial quantities of hydrogen, placing fuel security at risk.
    - There is only enough hydrogen production and supporting infrastructure (tube trailers) to fuel a single vessel in our current operations (where there is a total of 5 vessels operating at the AM and PM peak).
    - Hydrogen is expensive for both parties – for vessel implementation, fuel procurement and supply.
    - The Australian Maritime Safety Authority (AMSA) Novel Vessel Policy Statement (NVPS) places a significant burden on the design & approval process for alternate fuel technology, making it both complex and commercially unviable for industry.
- NRMA Marine believe the Government should not let perfection obscure progress to ensure that commercial investment decisions can be made and resources allocated based on clear Government policy frameworks to reach maturity more quickly.

4.2 Transport energy use (pg. 75-78)	*23. The Australian Government invited views on aspects of the energy transformation that represent the most material challenges and opportunities for the electricity and energy sector. Submissions closed on Friday 12 April 2024 (AEDT). This feedback will be used to inform the development of the Electricity and Energy Sector Plan and Net Zero Plan. The Australian Government will be undertaking targeted consultation to identify options for production incentives to support the establishment of a made in Australia low carbon liquid fuel industry, including through the release of a low carbon liquid fuels consultation paper. Feedback heard through this process will also inform development of the final Transport and Infrastructure Net Zero Roadmap and Action Plan.* *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?*
	24. How should the use of low carbon liquid fuels be prioritised across different transport modes over time to achieve maximum abatement?
	• Greater coordination between federal, state and local governments is required. For example maritime matters are regulated by a federal agency, however roads are regulated by state/territory governments as well as local councils. All levels of government must be involved to unlock the challenges with Low Carbon Liquid Fuels (LCLFs) in maritime and reduce the investment risk. Additionally, solving issues around the use of hydrogen in the road freight transport task will also have flow on benefits to the transportation of hydrogen to ports for use in maritime settings.
5.1 Travelling in partnership (pg. 79-83)	*25. What are the best ways for the Australian Government to work collaboratively with industry, business, governments and communities to implement the proposed pathways?*
	Capability & Assurance • Conduct an assessment and gap analysis of Australian-based technical capability and capacity to deliver the net zero pathway in a maritime context. • There needs to be a trained assurance capability within Australia, to act on behalf of the Australian Maritime Safety Authority (AMSA) similar to current surveyors. The capability should be built to deliver certification training to enable a trained workforce to conduct survey and assurance activities for 'novel' vessels. **Manufacturing & Industrial** • Identification of key industrial sectors for the construction and maintenance of 'novel' vessels and their requirements. • A standard fire rating and response to be battery fires (lithium) needs to be considered in a maritime context. The International Maritime Organisation are on the cusp of announcing a position and should be considered for adoption by AMSA. **Enabling Infrastructure** • State, territory and local governments need to identify and prioritise commercial wharfage and adjacent space for emerging vessel technology infrastructure. • Public infrastructure planning is vital operating a battery-electric ferry. Top up charging while in service is required to maintain the duty cycle in a public transport setting. At present this is challenging without substantive investment in upgrading electrical supply on public wharves which are typically state-owned assets. Overnight berthing (when vessels are not in use) also require access to high power supply. • The Australian Government should encourage state/territory governments to clearly show maritime operators fixed dates for the installation of alternate fuel bunkering infrastructure. Operators will not move or invest in projects without firm timelines. • The Domestic Commercial Vessels (DCV) space lends itself to electrification, however the sequencing of unrelated investments across energy grids (poles and wires), wharf upgrades and the vessels themselves is a condition precedent to success. Driving towards DCV vessels having back up LCLFs or similar as alternate energy sources for vessel electric propulsion will afford two key benefits under the broad heading of "don't let perfect get in the way of better".

	• Landside grid upgrades are required to support the electrification of the maritime industry, similar to the standalone grids powering public transport rail (train) infrastructure. In particular, to support the peak of services at any wharf location. • The generation of power / electricity should be from a sustainable source and thus, investment into renewables to power the grid. **Commercial** • Investment cycles in maritime, both DVC and offshore, are of 25-40 years' duration and therefore need clarity from the policy framework to ensure confidence in returns across the life of the assets. It is a priority to have a long-term structure and clarity on policy framework as it is the cornerstone of unlocking investment. • The continuity of public transport operations, and hence a city's economic output, in the event of a grid disruption should be considered. • The policy should allow for early investment in vessels and part adoption of electric propulsion until the grid matures. "Don't let perfect get in the way of better" to reach maturity more quickly. • There needs to be clarity of the taxation and wider financial constructs concerning the use of Low Carbon Liquid Fuels (LCLF) such that unintended consequences for the use of LCLF/bio-diesel yield best fuel tax credit position (i.e. an optimal commercial return of 20%). • Ultimately maritime public transport vessel (ferry) operators are off takers of fuel and in public transport settings efficient operating costs does not provideany benefit to the operator. In an environment where the revenue is set by the state, and the costs compensated for an increase for unit fuel costs needs to be an agreed position with state governments who manage the contracts of public transport. • Industry leaders should be selected and financially subsidised to be the early implementers of technology to meet timelines within the Net Zero roadmap.
	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?
	• The Australian Government should push for the introduction of 'template' legislation that can be applied uniformly across all jurisdictions where applicable. This partnership and collaboration approach has already been undertaken with some success with the establishment of the National Heavy Vehicle Regulator (NHVR).
	25.2. What opportunities can the government leverage to show leadership in Australia and internationally?
5.2 Measuring success (pg. 84-85)	*26. What measures and metrics should be used to evaluate the final Transport and Infrastructure Net Zero Roadmap and Action Plan?* *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?*
	27. Do you have any feedback on the proposed review process?
	28. Do you have any further feedback on the Consultation Roadmap and proposed pathways? *28.1. Is there anything missing? Are the sections appropriately integrated? Is the Roadmap appropriately ambitious?*
	29. Is there any further information or documentation that you wish to be considered with your submission?