Transport and Infrastructure Net Zero Consultation Roadmap

Take the survey

Department of Climate Change, Energy, Environment and Water

Response received at:
June 20, 2024 at 2:00 PM GMT+10

Response ID:
sbm2ec9e5b55e912f43afe0f

1 Confirm that you have read and understand this privacy notice.
Yes

2 Please indicate how and if you want your submission published.
Public and anonymous

3 Published name
Not answered

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

5 First name
[redacted]

6 Last name
[redacted]

7 Email
[redacted]

8 Phone

Not answered

9 Who are you answering on behalf of?

Individual or individuals

10 Organisation name

Not answered

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?

Tasmania

14 Postcode

7250

15 What area best describes where you live?

Regional area

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?

No

19 2.1 Please add details to your response.

Applies to aviation, not so much to other modes

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.

Only if very well planned as cheap self-driving technology will discourage active transport.

22 4. What should be included in a national policy framework for active and public transport and how should it be developed?

Should be developed in co-ordination with health departments to encourage more active transport – the reduction on emissions from fossil fuel burning in urban areas should save a lot of health costs.. There should be an integrated transport authority of some sort with (ocus on (1) planning for 'connected and. Automated vehicles' ie self-driving as public transport, (2) co-ordination with electricity planning to support grid.

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?

Charging for Carbon Emissions/Road damage/Congestion should be disaggregated. Cheap self-driving passenger and delivery vehicles are likely to reduce the amount of active transport and dramatically increase vehicle congestion. I suggest that for privacy and coordination planning, it would be better to have government run public transport managing it. Reducing speed limits in urban areas would also help cope with congestion - can fit in more vehicles and at a lower speed they are less threatening to other drivers and active transport users. Another alternative would be providing free or very cheap and very regular local transport in say 6-10 seater micro buses co-ordinated with mass public transport to reduce traffic.

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?

Charging for Carbon Emissions/Road damage/Congestion should be disaggregated – transitioning towards a New Zealand style road damage charge system – would encourage lighter weight vehicles and more frequent charging - there will of course be push back from those who like having their transport subsidised. Small off-grid solar farms on transport routes, some with battery backup, or battery swap facilities, could provide fast electric charging quite cheaply even while spilling a lot of power. The fairly recent Megawatt Charging System will make electrified long distant transport much more viable

25 6.2. How would these actions address the identified challenges and opportunities for emissions reduction in the movement of goods?

A big increase in charging infrastructure would reduce the mass of batteries required in vehicles and consequent road damage, particularly before higher density batteries become available.

26 7. Do you agree with the proposed net zero pathway for light road vehicles?

Yes

27 7.1 Please add details to your response.

Main focus should be on (1) charging infrastucture running ahead of projected demand as decreasing vehicle prices likely to lead to faster uptake if charging infrastructure available. (2) Planning for self-druiving.

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

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

Batteries are quickly getting cheaper and much more available, they can also provide grid/off-grid support, alternatives are unlikely to be able to compete being a niche market. Cheaper batteries likely to lead to wholesale transition to electric vehicles. Hydrogen not likely to be able to compete with denser batteries even in large vehicles, once available.

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

Very limited, maybe use in old vehicles but relies on sufficiently high carbon price to be able to compete..

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?

Should plan now for transition to road user charging. This will encourage the more rapid

adoption of denser batteries when available, even if they cost more. Rapidly expand charging infrastructure. Start planning now for integration of self-driving/automated vehicles for urban deliveries..

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?

No

48 19.1 Please add details to your response.

'Avoid' should be intial response to reduce air emissions. From Figure 16 there has been very little reduction in emissions per revenue passenger kilometre over last 25 years but a big increase in emissions. Without action this is likely to continue. 23MT of CO2-e for annual domestic aviation and international departing flights is not trivial, particularly as some researchers have suggested the additional impacts of high altitude emissions may almost double the impact. There are also the emissions of water vapour and NOx in lower stratosphere – NOAA shows continuing increase of stratospheric water vapour. Hence sustainable aviation fuels still would only partly reduce impact of aviation.

Buying dubious offsets for the carbon emissions alone does not seem any sort of appropriate response. The US EPA recently recalculated Social Cost of Carbon based on new research assesing future damage costs. Their central scenario for 2024 is around $A350 per tonne of CO2, suggesting the safeguard mechism still represents a large subsidy for emissions.

There will likely eventually be structural batteries that do not add greatly to weight but there is not yet a mechanism to cause those planes to be adopted when they are available.

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?

By seriously accounting for emissions - ie not relying on dodgy estimates for fugitive emissions or endlessly higher recalculations of LULUCF savings - have not yet accounted for 2019-20 bushfires

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?

Technological/Economic changes coming:
A few notes on likely changes in near future that will impact on plans

Cheaper batteries – 1 to 5 years ahead?
Bloomberg New Energy Finance (BNEF) in April 2024 noted that existing and currently planned battery manufacturing capacity for 2025 is 7.9TWh, more that 8 times actual production for 2023 and if built, enough to electrify all road vehicles built in 2025. They point out that although it is unlikely anything like that capacity will be reached, there will still be a large increase in competition and a lot of pressure on prices. RMI forecast battery demand rising to 2TWh in 2025 and 6+TWh in 2030. Combined with switch to Lithium Iron Phosphate chemistry (cheaper, more lifetime charging cycles), learning benefits from increased scale and the significant increase in mines (such that lithium price has dropped back to long term average) is likely to lead to much cheaper batteries fairly soon and vehicles a bit later. BNEF forecast a 40% reduction in battery prices 2024-2030 most of which might occur in next couple of years. Much cheaper batteries and EV to grid functionality is likely to lead to lower use of the grid in some areas as many more community and individual batteries are installed.

Denser or better batteries – 5 – 20 years ahead?
There have been quite a few announcements of breakthroughs in solid-state lithium batteries with much increased density, faster charging and longer lifetimes. If/when developed at large scale, this will vastly expand viable uses of batteries in more difficult transport operations and probably destroy much of the market for low carbon fuels. There is currently a lot of research into alternative chemistries which may lead to much better or cheaper batteries in future.

Self-Driving - 'Connected and Automated Vehicles' - 5-20 years ahead?
Cheaper batteries and cheaper electricity at times of abundant wind and solar could enable very cheap transport with lifetime vehicle operating costs of maybe 10c km for car equivalents and less for smaller local 'last kilometer' vehicles and small delivery vehicles. This could easily lead to a large increase in urban traffic and decrease in active transport.

Cheaper renewables
RMI, among others, forecasts wind and particularly solar will continue to become cheaper. Arena's ultra-low cost solar vision is for levelised cost of energy of less than 2c per kWh.

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

Not answered

69 Upload a submission

Not answered

70 Upload supporting file

Not answered

71 Upload supporting file

Not answered