Transport and Infrastructure Net Zero Consultation Roadmap

Take the survey

Department of Climate Change, Energy, Environment and Water

Response received at:
July 26, 2024 at 1:19 PM GMT+10

Response ID:
sbm2f8325192d9c0f59bb130

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
Australian Logisitcs Council

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

5 First name
Sheena

6 Last name
Fardell

7 Email
[redacted]

8 Phone

[redacted]

9 Who are you answering on behalf of?

Organisation

10 Organisation name

Australian Logistics Council

11 What best describes you or your organisation?

Industry

12 What sector do you represent?

Maritime
Rail
Heavy road vehicles (trucks, buses etc.)
Light road vehicles (cars, utes etc.)

13 What state or territory do you live in?

Victoria

14 Postcode

3038

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

Submission 240726 Net Zero Transport Roadmap Draft comments Final.pdf

69 Upload a submission

Not answered

70 Upload supporting file

Not answered

71 Upload supporting file

Not answered

Submission

Transport and Infrastructure Net Zero Consultation Roadmap Consultation Paper

Friday, 26 July 2024

The Australian Logistics Council (ALC) welcomes the opportunity to make a submission on the Transport and Infrastructure Net Zero Consultation Roadmap Consultation Paper (the Roadmap).

The ALC is the peak national body representing major companies participating in the end-to end freight supply chain and logistics industry with a focus on delivering enhanced supply chain safety, efficiency and sustainability. Freight affects every Australian, every day, everywhere.

Common goods purchased by Australians such as food, clothing, household appliances and medicine all need to be transported by freight operators. Australia's population is expected to grow by 10 million by 2040, an increase which must be supported through proactive investment in freight transport and freight logistics infrastructure.

The Australian economy has become increasingly reliant on sophisticated, continent spanning and international supply chain networks. The freight industry serves as the backbone of the economy, facilitating the movement of raw materials, finished products, and essential supplies both within Australia and across the globe.

The supply chain is made up of a highly complex network of interconnected and interdependent parts, with each component playing an essential role in ensuring the smooth and efficient flow of goods and services from a myriad of suppliers to a myriad of end consumers.

Supply Chain Systems

Decarbonising the freight transport sector necessitates a systems view that integrates all transport modes due to the intricate and interconnected nature of supply chains. The ALC emphasises that a holistic approach is essential, recognising that road, rail, maritime, and air transport are all critical components of the freight network. Addressing decarbonisation in isolation for each mode is insufficient; instead, a unified strategy that considers the entire supply chain as a single, complex system is required. The current consultation approach, which separates issues by mode, fails to capture the complexities and interdependencies inherent in modern supply chains, leading to suboptimal and fragmented solutions.

This systems view acknowledges that improvements in one mode can have cascading effects on others. For example, enhancing rail infrastructure for long-haul freight can reduce road congestion and emissions. Moreover, such an integrated approach ensures that policies and investments are aligned, creating synergies that amplify the overall impact on carbon reduction. This comprehensive strategy is crucial for achieving meaningful progress towards net-zero emissions in the freight transport sector as a whole.

Urban planning

The ALC has recently made a submission on the draft National Urban Policy, published in May 2024[1], which contained a number of recommendations to encourage a systems thinking approach which is essential for achieving economic growth, sustainability and resilience[2].

The submission is attached.

These recommendations should be considered when developing the final Roadmap.

[1] https://www.infrastructure.gov.au/sites/default/files/documents/draft-national-urban-policy.pdf

[2] https://austlogistics.com.au/wp-content/uploads/2024/07/Submission-240704-National-Urban-Policy-Consultation-Paper.pdf

The ALC also expects that there will be close coordination between the development of the National Urban Policy and the Roadmap so there is consistency in government policy – something that is essential if there is an expectation that industry will need to invest millions of dollars in capital investment to meet the net zero targets of government.

Freight operations cannot efficiently function if current and future freight infrastructure is restricted by urban encroachment issues. Urban and land use planning must therefore consider future needs for rail and road corridors, terminals and freight precincts and reserve freight corridors and land now, to allow the development of freight infrastructure in the future. This will ensure effective road and rail linkages with terminal precincts.

Electric Vehicles

Charging infrastructure to support a growing EV fleet is crucial. Range limitations and the associated 'range anxiety' is a barrier to EV uptake, and investment in charging infrastructure is required to create confidence that fleet conversion will be supported without compromising the current community transport experience.

The planning, design, procurement, and approval of sites (for any use, but particularly industrial usage) is complex across the various levels of government, often taking years in the planning process. To successfully and efficiently deliver infrastructure suitable for heavy vehicle charging that supports logistics hubs and primary freight routes, a holistic approach across jurisdictions is needed to ensure the national energy network is considered.

The ALC members would support the Commonwealth in driving a pilot program to ensure that the various planning authorities and governments across the country are working collectively, with industry and community input. A first step could be to scope the challenges associated with planning and development and identify the highest priority locations for charging infrastructure to facilitate a streamlined planning process.

We also note that there are locations not traditionally associated with refuelling but which present opportunities to introduce charging infrastructure, such as car parks, offices, retail properties such as supermarkets, cafes, and restaurants. In practice, subject to available site power supply, most properties with an accessible carpark can be available for EV charging.

Concerns are being raised by fire safety experts regarding the safety of EVs in some circumstances. This may be due to EVs being a relatively new technology that has only recently become widely available and industry experience with EV-related fires being low. We are not aware of many instances of EV fires in Australia; however, the sentiment of fire and rescue services and their concerns act as a deterrent for some landlords in providing approval for the installation of EV charging infrastructure as desired by EV fleet operators. This is especially prevalent with regard to underground carparks.

More research is required to understand the fire risks presented by EVs and practical and cost-effective ways to reduce those risks and safely manage fires if they occur. The government, via bodies like the Building Ministers Meeting, can help foster a mature debate on ways to address this issue.

Road pricing

Page 16 of the Roadmap says the government is working with states and territories on long-term options for zero emission vehicle road user charging.

One challenge for road infrastructure is that low and zero emission trucks are currently heavier than the existing truck fleet. The increased mass of these trucks is expected to result in increased road wear.

Although the extent of the increased wear is unknown – as are the costs associated with repairing any damaged roads – government will need to consider the impact of heavier vehicles on roads, including cases where road pavement upgrades may be needed to accommodate the increased mass of these vehicles. The road industry would benefit from the future planning of designated key freight roads and corridor, in order to improve productivity, mitigate road wear and tear and road congestion issues. It is also particularly well known that many of the road infrastructure assets managed by local governments are deteriorating in condition. This impacts the efficiency of the Australian supply chain as these roads are the important 'first mile' in moving many products from origination point to destination.

ALC note that the existing approach by several states has been to adopt Road User Charges (RUCs) that act as a disincentive to operate EVs before they are established in the wider fleet and before the Total Cost of Ownership

for EVs reaches parity with Internal Combustion Engine vehicles. A potential solution is to offer Road User Charging exemptions for EVs to encourage uptake. We think that any exemption should be temporary to balance the need for government revenue for transport infrastructure, without unduly curtailing EV adoption.

Supply chains are national in scope and not limited to state boundaries. A single, unified RUC mechanism is essential for commercial vehicles to give confidence to both buyers and suppliers of EVs, particularly those that traverse state and territory borders. Like fuel excise, we note that it would be preferable and logical for RUCs to be managed by the Commonwealth.

Ways to determine the application of Road User Charging to EVs may include when the proportion of EVs reaches an agreed threshold, or EV road use reaches an agreed percentage of all kilometres travelled by vehicles. Another option is to apply RUC when the Total Cost of Ownership of EVs is comparable to ICE vehicles.

It is well known that many road infrastructure assets managed by local governments are deteriorating. This impacts the efficiency of the Australian supply chain as these roads are crucial for moving products from origination points to destinations.

As ALC indicated to this Committee's 2023 Inquiry into the Implications of Severe Weather Events on the National Regional, Rural and Remote Road Network[3]:

> *...rebuilding our road infrastructure assets firstly requires an understanding that complex supply chain systems require a systems approach that acknowledges the interdependencies across the supply chain, including land use and infrastructure planning, rather than restricting the issue to a linear road network[4].*

However, that said, as indicated in the Grattan Institute's 2023 report Potholes and Pitfalls: How to fix Local Roads:

> *Local councils manage 77 per cent of our roads by length, but many councils do not have the revenue, capacity, or expertise to manage them to an acceptable standard. The problem will only get worse as more frequent heatwaves and flooding cause major damage to our roads and delayed repairs lead to more costly problems down the track[5].*

The Heavy Vehicle Road Reform project[6,7] is designed to establish a market that establishes a link between heavy vehicle user needs with the level of service they receive, the charges they pay and the investment of those charges back into heavy vehicle road services (likely through road/distance charging).

However, this project has been in progress since 2015. The work of this project should be expedited.

More generally, on 18 October 2023 the High Court handed down Vanderstock v the State of Victoria[8].

The case found that charging electric vehicles on the basis of distance travelled was unconstitutional, and so preclude the ability for jurisdictions to recover costs for the construction and maintenance of roads from electric vehicle operators as happens in New Zealand[9].

This poses a threat to state revenue streams and so preclude the ability for jurisdictions to fund the road infrastructure necessary to support net zero vehicles.

As the Council of Federal Financial Relations said on 24 May 2024:

> *The Commonwealth, state and territory treasurers agree that a substantial decrease in state and territory revenue bases is not in the interests of the Australian federation.*

[3] https://parlinfo.aph.gov.au/parlInfo/download/committees/reportrep/RB000033/toc_pdf/Inquiryintotheimplicationsofsevereweathereventsonthenationalregional,rural,andremoteroadnetwork.pdf

[4] Paragraph 5.4

[5] https://grattan.edu.au/wp-content/uploads/2023/11/Potholes-and-Pitfalls-How-to-fix-local-roads-Grattan-Report.pdf: 6

[6] https://www.infrastructure.gov.au/sites/default/files/migrated/roads/heavy/background/files/HVRR_What_we_are_doing_and_why_we_are_doing_it_16082016.pdf

[7] https://www.infrastructure.gov.au/infrastructure-transport-vehicles/transport-strategy-policy/heavy-vehicle-road-reform/background-heavy-vehicle-road-reform

[8] https://eresources.hcourt.gov.au/downloadPdf/2023/HCA/30

[9] https://www.nzta.govt.nz/vehicles/road-user-charges/ruc-for-electric-vehicles/

The Commonwealth supports states and territories maintaining stable revenue bases for the delivery of essential community services and infrastructure, which benefit all Australians.

The Commonwealth Government is working with the states and territories to ensure they have secure own source revenue bases and will continue to explore options, including legislative options, to protect state revenue sources[10].

A final Roadmap priority should be for the Infrastructure and Transport Ministers (ITMM) should be to work with the Council for Federal and Financial Relations for the prompt development of a sustainable road access pricing regime applicable to all classes of vehicles.

Light Commercial Vehicles

Action is needed to promote the uptake of EVs in the Light Commercial Vehicle (LCV) sector, especially by logistics and fleet operators. It is widely acknowledged that EVs have less range and payload capabilities compared with equivalent-sized Internal Combustion Engine (ICE) vehicles. Other major challenges relate to the Total Cost of Ownership (TCO) for EVs and their commercial appeal. These factors combine to mean that, despite significant savings from electricity charging compared to liquid fuel, the implied TCO of a commercial EV is at least 25-30% higher than an ICE vehicle.

A specific problem that can be overcome with a relatively small regulatory reform is the weight limit on Class C licenses.

An ALC member has noted in their home delivery business, trucks are driven by people with a Class C license (can drive vehicles up to 4.5T GVM). A fully assembled EV with a refrigerated body has an unloaded weight of about 3,400kg. This is 400kg more than an equivalent ICE delivery vehicle. While an EV is capable of carrying more payload, if the total vehicle weight (including payload) is above 4.5T, the driver must have a commercial driver's license.

Commercial driver licenses are more specialised, time-consuming, and expensive to attain, and it is therefore much more challenging to recruit qualified drivers in sufficient numbers to fulfill our customers' delivery needs.

The only practicable solution presently available is to reduce the payload for EVs. A payload reduction of a few hundred kilograms means that more delivery vehicles are required to deliver the same number of orders, which has a material effect on productivity. The productivity loss also exacerbates driver recruitment challenges and unnecessarily adds to road congestion and therefore more carbon emissions.

This can be overcome with weight concessions for drivers on a Class C license when operating EVs. Class C license holders should be permitted to drive an EV up to 5.0T GVM. This will reduce productivity barriers for fleet operators transitioning to EVs.

Heavy Vehicles

It is well known that it is difficult to abate the level of emissions from heavy vehicles[11,12].

In no small part this is due to the challenges involved in sourcing and purchasing at affordable prices zero emission vehicles (ZEVs). Given much of the development of Zero Emissions Vehicles (ZEVs) is being driven through more stringent legislation in Europe, North America, and Asia, it would be prudent to align Australian vehicle specifications with those jurisdictions to increase vehicle availability and reduce costs.

The move to accept increased vehicle width to 2.55m and New South Wales' concession on mass limits for heavy low and zero emissions vehicles operating on the state road network are positive steps. More is needed to address steer axle mass issues, as indicated in the discussion paper, and the Commonwealth could lead efforts to

[10] https://ministers.treasury.gov.au/ministers/jim-chalmers-2022/media-releases/council-federal-financial-relations-statement

[11] Climateworks Centre (2023) *Australia has the tools and technologies at its disposal to decarbonise most sectors of its economy:* https://www.climateworkscentre.org/news/how-australia-can-reduce-greenhouse-gas-emissions-in-hard-to-abate-sectors/

[12] Brookings Institute *The Challenge of Decarbonizing Heavy Transport:* https://www.brookings.edu/wp-content/uploads/2020/09/FP_20201001_challenge_of_decarbonizing_heavy_transport.pdf

standardize the approach taken by all states and territories. National alignment on rules to enable the introduction of these vehicles should be an explicit element of the pathway.

There are also challenges arising from the transition to zero emission heavy vehicles including lack of adequate lack of adequate charging and refuelling infrastructure, especially in rural or regional areas along federal highways and high upfront cost.

As discussed on page 41 of the Roadmap, it is unlikely that electric vehicles will have the capacity to be efficiently used to transport many commodities because of the payload and distance shortcomings possessed by battery electric trucks.

Moreover, as reported on 28 June 2023:

> *The availability of FCEV (hydrogen powered) trucks in Australia from original equipment manufacturers (OEMs), preferred by road transport operators and financiers, is low or missing with most going to left-hand drive markets in Europe and North America, meaning no right-hand drive trucks are available in any quantity for Australia[13].*

Whilst hydrogen powered vehicles may be required for larger payloads and distance in the immediate future, the high upfront cost of switching to low or zero emission trucks, together with the potential impact these heavier vehicles will have on road pavements will remain challenging even after the regulatory barriers have been removed.

Battery electric trucks may be limited to shorter distances with lighter payloads until battery technology and charging infrastructure improves. Improving the availability of charging infrastructure and appropriate financing mechanisms to address up-front costs will be important.

There is also some doubt that the infrastructure to permit the efficient and convenient refuelling of hydrogen vehicles will be rolled out in the short to intermediate term. The co-investment of up to $10 million per jurisdiction to establish the 'hydrogen highway' would appear insufficient to fund the infrastructure to allow hydrogen powered trucks to conveniently refuel.

Renewable diesel can be used interchangeably with diesel as an alternative in current diesel engines, or as a blend with diesel without machinery needing any modifications. Its use is widely supported by Original Equipment Manufacturers,

For the reasons discussed on page 46 of the Roadmap, a 2024-2030 target should be to prioritise the development of a renewable diesel supply chain in Australia, and to incentivise the use of the product as supply increases.

The final Roadmap should also:

- develop incentives for industry to take up ZEVs;
- set out a timetable for rolling out the infrastructure that would conveniently permit the refuelling of ZEVs, irrespective of whether they are electric or FCEV (hydrogen powered) vehicles throughout the entire Australian road network. This may include encouraging increased private sector investment in infrastructure;
- building on the recent changes to the Heavy Vehicle National Law approved by ITMM review existing heavy vehicle regulation[14] consider further changes to the width and mass provisions of the HVNL to compensate for, in particular, the additional weight of electric trucks and so increasing operational efficiencies; and
- in a bid to increase supply and reduce the cost of low carbon fuels, the final Roadmap should (subject to there being confidence that there will be commercial quantities of product available) explore opportunities to develop a mandate to use low carbon liquid fuels (LCLFs).

This means that in relation to question 10 posed in the Roadmap which asks a ranking from 1 to 3 the mix of fuels and vehicles to encourage emissions reduction, the following ranking is suggested:

1. The use of LCLF in vehicles.

   Note that LCLF is not presently a focus of our members because it represents a short-term offset which is useful for early stage and partial abatement. If supply can be created at a price that the market can

[13] https://autotalk.com.au/industry-news/hydrogen-trucks-planned-for-australia

[14] ITMM communique 7 June 2024: https://www.infrastructure.gov.au/sites/default/files/documents/itmm-communique-7-june-2024.pdf

bear, it can be introduced quickly to progressively drive carbon reduction in the near term, which would be a first step.

2. A mix of battery electric vehicles.
3. Hydrogen fuel cell vehicles.

It is imperative that the investment and rollout of these technologies is well timed. While all three will have a role to play, fragmentation of investment may further dilute or confuse the ability to scale solutions in the near term.

Rail

Rail offers significant emissions reduction benefits compared to other freight modes. While trucks are appropriate for small distances, and for first and last mile, government should be incentivising rail freight for longer distances in order to realise immediate reduction in carbon emissions for the transport sector. Over long distances trains burn less fuel and carry higher volumes compared to road transport, so when freight switches to rail it helps to abate total supply chain emissions.

There are several challenges and potential barriers to overcome to support the decarbonisation of rail freight, as set out in the document The Critical Path to Decarbonise Australia's Rail Rollingstock (Australasian Railways Association, published July 2024).

As decarbonisation progresses, there will continue to be key challenges for rail freight, including:

- **THE COMPETING REQUIREMENTS OF PASSENGER AND FREIGHT RAIL FOR ACCESS TO THE RAIL-WAY TRACK**

  In many of our cities, the passenger and freight rail networks are shared. In order to enable both an increase in rail freight (that is desirable to reduce emissions and road congestion issues), and an increase in public transport use (that supports reduced private vehicle emissions), the policy framework needs to consider how to achieve both of these outcomes and must allow both passenger and freight trains to efficiently coexist on the rail network.

- **THE NEED TO CONTINUE HARMONISATION EFFORTS TO ENSURE INTEROPERABILITY ACROSS THE NATION**

  It is critical that Australia has a rail access framework that supports improved rail freight productivity and interoperability as we transition to becoming a low-carbon nation. There are nine different rail infrastructure managers across Australia, each with the ability to set their own standards and implement different low emission technologies that may not necessarily align to requirements on other networks.

In addition, many rail freight organisations are exposed to the risk of additional costs under the Safeguard Mechanism and essentially face two sets of costs: 1. the costs to decarbonise the operation and 2. the potential costs to buy and surrender Australian Carbon Credit Units (ACCUs). These higher costs will ultimately lead to cost increases for Australian families and households.

The double-cost faced by rail operators under the Safeguard Mechanism are due to the requirement to buy and surrender ACCUs for compliance requirements, while at the same time having to fund decarbonisation projects in order to decarbonise their own operations (as opposed to ACCUs – which is essentially funding decarbonisation outside of the industry). A mechanism to reduce this cost-impost would be to allow facilities that are facing obligations to buy and surrender ACCUs under the Safeguard Mechanism to substitute capital expenditure on decarbonisation as an alternative.

It is also worth noting that while the decarbonising intent of the Safeguard Mechanism is commendable, the Safeguard Mechanism is not a level playing field. While many rail freight operators are captured under the Safeguard Mechanism, other transport modes aren't. This imposes additional costs on rail freight, making it less attractive as a freight mode of choice for customers. One solution to address the inequity and level the playing field would be to exempt road-contestable rail-freight from the Safeguard Mechanism. This would reduce the risk of carbon leakage from one freight segment to a higher-emissions freight segment.

The decarbonisation of the roll out of infrastructure to support hydrogen and battery electric train will be required to shift demand away from diesel locomotives.

As with heavy vehicles in relation to question 10 posed in the Roadmap which asks a ranking from 1 to 3 the mix of fuels and vehicles to encourage emissions reduction, the following ranking is suggested:

1. The use of LCLF in vehicles.
2. A mix of battery electric vehicles.
3. Hydrogen fuel cell vehicles.

Maritime

ALC generally agrees with the proposed net zero pathway for maritime set out in Figure 15 of the Roadmap.

ALC has identified four key focus topics for consideration by the Australian Government. These include:

1. **International Consistency**: Any actions relating to vessels must be consistent with the approach adopted by the International Maritime Organisation (IMO) to avoid disadvantaging the Australian market given the nation's reliance on international shipping as our primary mode of transport for international trade.
2. **National Consistency:** Any actions relating to ports and freight supply chains must be applied consistently nationally to avoid disadvantaging a state, port or supply chain.
3. **Commercial Availability, Scale & Maturity for Decarbonisation:** In considering decarbonisation measures at ports and throughout the broader supply chain, including the maritime shipping sector, critical factors include commercial availability, scale and maturity of technology solutions, including availability of alternative fuels and renewable electricity, global availability of new equipment (e.g. electrified cargo handling equipment or engines able to accept alternative fuels) and the capacity of the National Energy Market (including grid capacity of local substations) to support electrification demand.
4. **Economic Cost Implications:** The types of decarbonisation measures to be implemented and any imposition of such measures will have an economic cost which will ultimately add to the cost of goods for Australian consumers and businesses. Decarbonisation initiatives