# Transport and Infrastructure Net Zero Consultation Roadmap

## Take the survey

Department of Climate Change, Energy, Environment and Water

Response received at:
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Response ID:
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**1** Confirm that you have read and understand this privacy notice.
Yes

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

**3** Published name
CSL Australia

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

**5** First name
Not answered

**6** Last name
Not answered

**7** Email
Not answered

8 Phone

Not answered

9 Who are you answering on behalf of?

Organisation

10 Organisation name

CSL Australia

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?

New South Wales

14 Postcode

2060

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

CSL Australia_Response to Transport and Infra Net Zero Roadmap Aug24.pdf

69 Upload a submission

Not answered

70 Upload supporting file

Not answered

71 Upload supporting file

Not answered

# Department of Infrastructure, Transport, Regional Development, Communication and the Arts

# Response to 'Transport and Infrastructure Net Zero Consultation Roadmap'

Submission by CSL Australia

August 2024

## 1. CSL Australia

CSL Australia (CSL) is the largest dry bulk shipowner/operator on the Australian coast. A subsidiary of Canadian owned CSL Group, CSL own and operate a fleet of up to twelve self-unloading bulk carriers, pneumatic cement carriers, standard bulk carriers and transhipment vessels in the Australian coastal region. Over 27 million tonnes of dry bulk cargoes, including cement, clinker, sugar, iron ore, gypsum, mineral sands, magnetite and coal are shipped and transhipped on CSL vessels for major industry participants on an annual basis. The CSL coastal vessel footprint operates in the federal regulatory regime and consists of four General Licence (Australian flag and crew) vessels and a flexible number of vessels operating under a Temporary Licence.

The CSL Group core business is owning and operating self-unloading bulk carrier vessels. In Australia, this also extends to fully enclosed pneumatic cement vessels and transhipment operations. Pneumatic cement vessels eliminate air-borne dust from cement that is discharged into shore side cement facilities. Our transhipment operations in Whyalla and Cape Preston provide economies of scale for bulk cargo exporters by providing a small feeder vessel to load panamax and capesize vessels within the naturally deeper waters of a port.

## 2. General comments

CSL welcome the Transport and Infrastructure Net Zero Consultation Roadmap as being a positive step towards supporting the decarbonisation of the maritime industry in Australia. CSL have participated in the Maritime Emissions National Action Plan (MERNAP) consultation through responses to the released issues papers and targeted industry consultation. We hope that our comments assist in the understanding of the challenges, opportunities and enablers for successfuel emissions reduction from the perspective of an Australian shipowner with a fleet of coastal and short sea vessels.

CSL is committed to decarbonising our global fleet to meet national, international and our own internal emissions reduction goals. The rapidly changing landscape of low carbon fuel options and decarbonisation solutions are being tracked by every shipowner around the world. If these options were economically and operationally feasible, we would all switch tomorrow. The challenge is to facilitate this transition in a way that incentivises infrastructure investment and reduces the cost of alternative fuel supply chains, while ensuring that any operational hurdles are addressed.

Greenhouse gas emissions from shipping is a global issue that can only be addressed effectively if national regulation supports and complements international regulation. Any incentives or regulation cannot be implemented in isolation, without acknowledgment of International Maritime Organisation (IMO) regulations and guidelines. Many IMO member countries are further advanced than Australia and we should learn from what has been implemented elsewhere while acknowledging and aligning with future IMO pathways. It has been demonstrated that regulation accelerates the decarbonisation transition. The impact of the European Union Emissions Trading Scheme and FuelEU regulations have triggered a significant pace of alternative fuel development and growth in decarbonisation and efficiency options that is spreading beyond Europe into the global fleet. Without a regulatory impetus or incentive in Australia, change will not happen fast enough to keep up with international requirements.

One low carbon liquid fuel (LCLF) or decarbonisation solution will not fit all vessels. Vessel types, trade patterns, availability of fuel and shore infrastructure will contribute to the decarbonisation solution of choice for each vessel and shipowner.

## 3. CSL Experience with decarbonisation pathways

CSL operates a fleet of self-unloader and pneumatic vessels. This type of vessel replaces/reduces shore side infrastructure requirements, which enhances the cost effectiveness of the supply chain. To reduce shore side infrastructure, the discharging operation on the vessel is more sophisticated, capital intensive and ultimately, carbon intensive. As an example, a pneumatic cement carrier will consume over 10 mt of fossil fuel when discharging and therefore emit 32 t more CO2 than a standard bulk carrier operating onboard cranes. Due to the higher carbon intensity of these operations, CSL has been exploring LCLF's and decarbonisation solutions both within Australia and in our international fleets.

When considering alternate energy sources, we examine the emissions reduction value for our operation vs the lowest cost. Renewable shore power is an alternate energy provision that we consider for our SUL and pneumatic vessels, due to the vessel type. Despite this, shore power still has a lesser emissions value benefit compared to low carbon liquid fuels. This is due to the proportion of time spent connected to shore power being significantly less than the time spent at sea (2 days vs 6-8 days).

Low carbon liquid fuels are the preferred alternative energy source if the cost is readily comparable to existing fossil fuels. From a technical and operational perspective, CSL examines the following parameters:

- availability in ports where the vessels load/discharge on current trades (no deviation).
- if engine retrofit is required - CAPEX requirements, time out of service, life of vessel, location of dry dock.
- crew requirements including expertise, training, additional crew numbers.
- safety when handling the fuel
- onboard storage/tank requirements – reduction in cargo carrying capacity

CSL has over four years of experience with B100 biofuel in our Canadian operations. Throughout this time rigorous testing was conducted on vessel engines and air emissions. In 2023, over a 6 month trading season, eight vessels consumed over 16,300t (18.5 million litres) of biofuel and eliminated over 40,000t of GHG emissions.

Biofuel is a drop-in LCLF fuel, therefore no vessel retrofit is required. During the initial years of the program, we consulted with our Original Engine Manufacturers (OEM's) who confirmed that biofuel was appropriate to use in our existing engines. The operational handling, safety and crew requirements for biofuel are comparable to diesel so there was minimal interruption to crew procedures and normal operation. The additional volume of biofuel that is required to provide the same energy output in our Canadian operations is around 12%, which resulted in a higher premium to traditional fossil fuels. The benefits of biofuel from an operational, safety and capital cost

perspective are significant. CSL strongly believe that biofuel will be a significant part of this fuel mix, not only as a transition fuel but as a long-term option to 2050 and beyond.

In Australia, biofuel supply exists, however in small quantities and at a significant price premium to marine fossil fuels (~40cent per litre). The supply chain from production to port is challenging, given existing port land use and difficulties in developing a cost-effective solution at a relatively small scale. Biofuel has recently been designated a marine fuel by the IMO, with international standards released to control the handling and use of biofuel onboard vessels.

In the longer term, CSL is considering green methanol as a viable alternative to fossil fuels and a longer-term solution to traditional biofuel, given foreseeable supply constraints as marine use competes with aviation and road applications.

CSL are currently building the first Australian diesel electric battery hybrid self-unloading vessel to carry limestone from Klein Point to Adelaide in South Australia. The vessel design is a scalable battery solution, where shore power will be used at both ports. The vessel should be 100% battery powered by 2031. Electrification is a viable decarbonisation pathway for smaller bulk carriers on dedicated port-to-port short voyages. Renewable electricity and shore side electricity grid support are key elements to enable this pathway.

CSL support the uptake of biofuel, green methanol and electrification as pathways to decarbonising our Australian fleet.

## 4. Proposed net zero pathway for maritime

The proposed net zero pathway demonstrates a practical path forward for maritime, however success is dependent upon the availability and cost of low and zero carbon fuels. Propulsion technologies require no changes for drop-in biofuels, so the proposed 'pilot projects' could be undertaken immediately if supported by a viable local supply chain. For ammonia and methanol, propulsion technologies are being developed, however the installation of these will be on newbuild vessels and thus depend on the life cycle of current vessels performing short routes and coastal shipping. Retro-fit technologies can be tested however the cost of these design solutions is currently prohibitive.

Electrification is a viable option for short routes however this pathway is dependent upon cost-effective shore infrastructure and reliable renewable electricity supply. Again, vessel life cycles will drive adoption of this pathway, as standard propulsion vessels require significant retrofit. Current diesel electric vessels can be converted to battery, although at significant cost. Investment support for shore side infrastructure is key to enabling an effective charging network.

LCLF's have a long-term place in the maritime decarbonisation pathway, beyond 2030 and 2040. Vessel life is a significant driver in the timing of the uptake of any 'future' fuel. Today, vessels are still being designed and built that are standard fossil fuel-based propulsion or diesel-electric. These decisions by shipowners are being driven by the uncertainty of the supply and cost of alternative fuels. These vessels will be operational for the next 20-30 years and will require either retrofit or a drop-in LCLF fuel post-2050.

## 5. Actions required

The Australian Government can promote the use of LCLF, particularly biofuel, through incentives and regulation to establish a competitive market in the immediate term that is price comparable to the fossil fuel bunker market.

For biofuel use in shipping, there are no operational barriers to consumption and no trials or testing that are required for the maritime sector. In the next 3 months, CSL could switch to a B100 biofuel on 8 of our vessels operating on the east coast of Australia and reduce CO2 emissions by approximately ~70,000t per year, however the current price premium cannot be borne by Australia's domestic industrial supply chains. We need a locally produced competitive and stable biofuel market to reduce emissions while maintaining the financial viability of Australian coastal shipping and domestic manufacturing industries.

The volume of biofuel required for vessels trading in Australia is small in proportion to aviation and trucking requirements. If the Australian government can incentivise a specified amount of biofuel volume to cover the maritime sector then this could maintain a competitive price point.

Regulation through a cost of carbon mechanism will drive demand for alternate energy sources. Externally driven financial impetus through government or International Maritime Organisation (IMO) regulation is required to incentivise all parts of a supply chain, particularly a supply chain that spans international borders and waters. A cost of carbon for non-compliance creates a business case for investment in efficiency and alternate fuels and incentivises a quicker phase out of inefficient fossil fuel-based vessels.

Uptake of low and zero emission energy will be slow in the maritime sector globally, particularly in the blue water/ocean going segment. Ocean going vessels have an asset life of over 20 years and up to 40 years on some trading routes and within natural environments such as freshwater lakes. Some larger shipping companies are able to fund ongoing and large-scale fleet replacement to zero carbon fuelled vessels, however the business case is not viable for many shipping organisations to recycle vessels early and replace them with a higher cost asset (both operationally and higher capital cost).

The dry bulk fleet in Australia (and internationally) may be slower to move towards low and zero energy due to the nature of the cargo and the proportion of supply chain emissions. Many dry bulk cargoes are a feedstock to a highly carbon intensive production process, such as cement and steel. The Scope 1 carbon emissions of the production process significantly exceed the Scope 3 emissions by vessels in the cargo owners supply chain. There is therefore less incentive for cargo owners to pay a premium for carbon reduction in their shipping supply chain, as it is a very low proportion of their overall emissions (approx. 1-2%). The capacity for the cargo owners to pay significant premiums is more difficult for low-value cargoes. The business case for alternate energy fuelled ships becomes less viable if the customer/cargo owner cannot contribute to the premium on capital and operating costs.

## Conclusion

Stable and prescriptive policy settings for decarbonising the maritime sector are required to ensure a timely and reasonable pathway for vessels on Australian coastal trades and calling at Australian ports. Support is needed to create viable and cost competitive supply chains for fuels that offer immediate emissions reduction, such as biofuel, with no additional capital investment onboard the vessel. Shoreside infrastructure investment must be incentivised to create viable renewable shore power. Ultimately, shipowners design and investment decisions will be driven by cost certainty and availability of fuels and enabling infrastructure on the Australian coast.