Transport and Infrastructure Net Zero Consultation Roadmap

Take the survey

Department of Climate Change, Energy, Environment and Water

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Lydia Kindred

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Yes

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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?

New South Wales

14 Postcode

2480

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.

Renewing regional railway lines will support this strategy greatly, while helping local residents and economies to thrive.

18 2. Do you support the use of the avoid-shift-improve framework as a tool to identify opportunities for abatement?

Yes

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?

Yes

21 3.1 Please add details to your response.

Pairing local train services with bike and walking trails, side by side, will support all members of the community. The reintroduction of local train services will take cars and trucks off the road, reducing damaging emissions.

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

By sharing railway corridors with local light rail and train services with bike and walking trails, side by side, all members of the community will benefit. The reintroduction of local train services will take cars and trucks off the road, reducing damaging emissions and providing much needed support for the many people suffering isolation and mental health concerns in regional areas. Public private partnerships are possible as the use of non road transport is highly favoured by a majority of people. It is more comfortable, safer and more time table reliable as road travel gets more congested and more dangerous. Having bike paths throughout towns gives a healthy option for those who are able to ride but the win-win of having both delivers the best outcomes for all.

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?

All the stakeholders above need to work together in partnership so that the best outcomes can be reached. Often communities can help via volunteering to make things happen which lessens the costs for all levels of government. Businesses and industry can also support better outcomes where sponsorship can provide financial help for specific projects that benefit the community. Moving people via rail is more efficient and moves more people at a time, faster and more safely than on the road.
Solar powered trains, pioneered in Byron Bay, are an excellent way to move large

numbers of people and also some freight without any emissions at all. The local Byron Solar Train only uses 23% of the power generated to run the train, so pumps 77% back into the grid, which helps pay for the running of the regular hourly rail service.
Local railway companies, the Northern Regional Railway Company and Northern Rivers Rail Ltd are working hard to extend the current solar train service throughout the rest of the Northern Rivers railway corridor. This will be a game changer for the 315,000 residents and the 2.4 million visitors to Byron Bay alone each year. Spreading the tourist dollars to other towns along the line, like Lismore which has suffered terribly from the massive floods over 2 years ago, will bring the local economies up again, supporting small businesses and uplifting spirits of many who feel despondent at the slow progress of rejuvenating the local region.
Utilising big steps forward in battery technology can lead the way to reducing transport emissions.

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?

Australia needs more usage of railway lines for freight which will help to cut down on our road haulage emissions. Australia has more on road freight movements than anywhere else out of the OECD countries.

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

Transporting freight by rail will lessen emissions per tonne transported as well as cost less for businesses. Less heavy truck activity on roads and highways will lessen road accidents with long haul drivers. Changing the emphasis onto more local truck movements means drivers can go home at night which will benefit their health and wellbeing.
This will provide less emissions generally to help support the 2030 Federal government emissions targets.

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.

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?

Helping more efficient light vehicles to be available in Australia of all price ranges rather than be too expensive for most people to be able to afford is something to consider.

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

Searching throughout the world for many options of low emissions vehicles, and even building our own OZCar! A small, compact zero emissions run around vehicle would suit many people and address quickly the burden of heavy emissions that are being experienced and affecting climate change greatly. It could be a popular export as well! It would also create thousands of new jobs.

30 9. Do you agree with the proposed net zero pathway for heavy road vehicles?

Yes

31 9.1 Please add details to your response

Cutting down on very polluting diesel-powered vehicles will go a long way to reducing our carbon footprint! New battery technology can help now to transition to a zero emissions future.

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: Hydrogen fuel cell

3: Low carbon liquid fuels

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

Battery technology is moving forward apace. I know that hydrogen cells are beginning to be used but not sure if they need more power to create their output than is desirable. Low carbon liquid fuels are a great idea. We could be running vehicles on cheap and easily accessible vegetable oils that have low polluting properties.

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

I think it is a great place to research asap as this may be a wonderful means of transitioning to lesser polluting fuels.

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?

More focus on rail based transport and local freight hubs for less long distance road transport that adds on the vehicle miles to food and other products, contributing to more global emissions. Growing more locally and having more local freight hubs are ways of countering the massive amount of movements, sometimes from one side of the country to the other and then back again!

36 13. Do you agree with the proposed net zero pathway for rail?

Yes

37 13.1 Please add details to your response.

New technologies can make rail the most efficient and climate friendly way to transport people and goods.

38 14. The proposed pathway for rail relies on a mix of battery electric, hydrogen fuel-cell and low carbon liquid fuels.Rank from 1 to 3, the order in which these should be prioritised for emissions reduction.

1: Battery electric
2: Low carbon liquid fuels

3: Hydrogen fuel cell

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

Batteries are getting more and more efficient to move rail motors now. Low carbon liquid fuels seem like a cheaper and very practical way of powering rail transport with little change to the diesel powered trains we currently use so could be a great way to quickly cut down on emissions. Hydrogen fuel cells seem great but not sure if the technology is expensive and harder to implement? I need to learn more about this option.

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

I think it could be implemented quickly with little change to disel motors so should be utilised asap.

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?

They all need to look together at the pros and cons of all the options then move forward with all technologies in the order they can be implemented as easily as possible, especially in relation to the amount that they are reducing emissions. Perhaps, as with this survey, industry and government can look at the comparative figures and make them and their deliberations available to other stakeholders, even to those within the community who are interested.

The fact that the present government is looking to endorse and activate these options is a credit to them, in order to lessen our human affects into the future on the catastrophic climate change potentials we are facing.

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

If rail emissions are reduced with all these options being utilised, the hope of a more wholistic way of transporting goods and people will be reached.

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

Yes

44 17.1 Please add details to your response.

I do not believe that nuclear is the way to go for our future submarines. The half-life of uranium and plutonium etc being so long are a great concern. To find safe places for the refuse to be housed will always be a great challenge.

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?

More smaller boats and ships would be more logical than big slow ships as we have a very large coastline which needs to be able to be protected quickly in the event of any sort of invasion. These could be run on the same fuels that have been suggested for other transport vehicles, which have less emissions and are more climate friendly.

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

Finding better sources of fuels is the obvious way we must go to reduce emissions.

47 19. Do you agree with the proposed net zero pathway for aviation?

Yes!

48 19.1 Please add details to your response.

Aviation is one of the most polluting forms of transport. In France you cannot go on a plane if you have less than 2 1/2 hours travel. You must go by rail! This is another reason why we, in this vast country of Australia, need to utilise the tracks that are already there to run train services again. We in the Northern Rivers (and New England) need our train services to return! Vast distances on bad roads make life challenging for so may people and businesses when new rail technologies make renewing tracks and bridges and culverts much less expensive than in times past.

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.

Good on you, Aussie Federal government!

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?

Looking at emissions control through using different fuels and diverting more people onto rail is a good start!

51 21. Do you agree with the proposed net zero pathway for transport infrastructure?

Yes

52 21.1 Please add details to your response.

All transport needs to become low to zero emissions asap.

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?

All of the above.

54 22.1 How would these actions address the identified challenges and opportunities to reduce transport infrastructure emissions?

As with 26 European Transport Ministers meeting in 2022 who decided they needed to get as much transport out of the air and off the roads and onto rail as possible for climate change reasons, we also need to re-focus in that direction as our forefathers saw a long time ago. Many of the train lines have been closed and sadly some are being targeted for simple bike paths ('rail trails')!

We can't lose this precious infrastructure when the cost of building new lines is much more expensive (in Queensland, the premier at the time, Joh Bjelke-Peterson, and Minister Russ Hinze, destroyed railway lines in the south. Later governments had to pay between $56 - 79 million per km to buy land again to reinstall railway services near there!) Transport is so needed in regional areas where many peole would move to, away from crowded cities, to repopulate the rest of the country if there was decent public

transport via rail!
Rail is the preferred way of public transport travel, providing comfortable, safe journeys, away from roads, which are otherwise affected by the over burden of too much traffic, leading to high maintenance costs for governments of all levels.
Many elderly, disabled and youth cannot drive cars so are at a great disadvantage in the country. Big buses are hard to climb onto and are affected by traffic congestion which is building up in many regional areas. High petrol prices and lack of parking also contribute to a stressful outcome for many country people in rapidly growing rural and regional areas. Please consider allowing Public Private Partnerships to bring much needed rail services out to areas beyond the metropolitan areas of cities where trains play such an important part in the daily lives of the residents.

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?

Community consultation as well as, of course, industry consultation is important. Thank you for asking!

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

The most pollutant fuels must be targeted in whatever form of transport that they are being used. If governments can phase out diesel fuel with its accompanying rebates, that will be a real step forward.

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?

Working together is optimum.

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?

As noted, 26 Ministers of Transport from all over Europe met in France in 2022 to work

out how to get as much freight and people out of the air and off the roads and onto rail as possible to address their climate change concerns!

59 25.2 What opportunities can Government leverage to show leadership in Australia and internationally?

Using new low - zero emissions in all forms of transport. Building our own OZCar that is efficient, climate friendly zero emissions, and not too expensive for the average person to buy.

60 26. What measures and metrics should be used to evaluate the final Transport and Infrastructure Net Zero Roadmap and Action Plan?

Reduction in climate changing gases as measured by CSIRO etc.

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?

Look at other countries' research into these new fuels etc.

62 27. Do you have any feedback on the proposed review process?

It is great to have the opportunity to give feedback. Perhaps let more people know via advertising that they can have their input.

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

No

64 28.1 Is there anything missing? Are the sections appropriately integrated? Is the Roadmap appropriately ambitious?

Yes, thank you

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

Degradation Study Synopsis, Dec 2023.docx

69 Upload a submission

Not answered

70 Upload supporting file

Not answered

71 Upload supporting file

Not answered

Report from the Northern Regional Railway Company Pty Ltd:

Lismore to Yelgun Degradation Study Now Complete

Introduction
After two years of licensing obstacles and six months of an intensive degradation study, the team at Northern Regional Railway Company Pty Ltd (NRRC) are thrilled to announce that the Lismore to Yelgun Degradation Study is now complete. This study was a crucial step towards understanding the feasibility of restoring the railway line between Lismore and Yelgun. Throughout the study, we worked through a number of challenges, developed assumptions to guide final cost, and identified potential costs and opportunities for future development. In this article, we will outline the interim findings of the study and shed light on the possibilities for the revitalisation of this important railway line.

Detailed Inspections and Complex Records
A total of 71.94 kilometres of track were thoroughly inspected during the degradation study. Qualified rail workers meticulously examined the tracks, capturing over 1000 photographs, hours of ground and drone-based video, and hundreds of pages of detailed records and assessments. We utilised drones to enhance our inspection capabilities and utilised a range of expertise including qualified track inspectors and certifiers, bridge and rail engineers, and civil construction consultants. Additionally, we utilised a range of companies to help develop a comprehensive restoration strategy and pricing. Eleven companies provided pricing, and three companies provided additional engineering support.

This was the first time since closure that every inch of the track was inspected to get a detailed costing.

Bridges, Level Crossings, and Infrastructure
During the study, crews inspected 113 bridges, including both small bridges over drains and larger structures. We also examined 35 public and private level crossings. To accurately assess the condition of the railway line, crews thoroughly evaluated various associated railway infrastructure. The findings from these inspections helped us shape our assumptions and estimate the scope of restoration work required.

Key Assumptions Made during the Study

Throughout the degradation study, certain assumptions were developed to guide our restoration strategy. These assumptions include:

- The track will need to be suitable for a 22-ton axle load.
- Approximately 80% of the existing rails can be salvaged.
- About 90% of existing turnouts can be salvaged.
- All timber bridges and timber components will require replacement.
- All public level crossings will need to be upgraded with minimum flashing lights.
- All private level crossings will require upgrading to meet current standards.
- All ballast will be replaced or thoroughly cleaned.
- The track underbed will require stabilising.
- Around 60% of fencing will need replacement.

Study Breakdown and Average Running Speeds

To ensure a comprehensive analysis, the degradation study was divided into four parts: Lismore to Bangalow, Bangalow to Byron Bay, Byron Bay to Mullumbimby, and Mullumbimby to Yelgun. The restoration strategy considered various sleeper types, including timber, steel, concrete, or a combination, with the ultimate goal of returning to or surpassing the original line's running speed.

The final costings are based on bringing the track back to the original running speeds and ensuring that from commencement of construction to the end of the first 10 years the cost of maintaining the tracks and the risk of infrastructure damage from events such as floods and fires is minimal.

The study also considered initial investment which would longer term ensure maintenance was cost neutral and not reliant on the public purse.

Station Upgrades and Potential Restoration Costs

As part of the degradation study, we also assessed the need for station upgrades.

The distance from Lismore to Bangalow spans 33.701 kilometres, with an estimated restoration budget of $80,000,000. This is by far the most complex section of any part of the line due to the number and variety of bridges and crossings with some areas of significant degradation. A train could become operational for as little as $35,000,000, however significant annual investment would be required on an ongoing basis.

The distance from Bangalow to Byron Bay is 12.932 kilometres, with an estimated restoration cost of $18,000,000. The line could be reinstated for as little as $13,000,000 however would require eventual upgrades and would be subject to lower speeds and risk damage during natural events such as fire and heavy rain.

Byron Bay to Mullumbimby covers a distance of 15.606 kilometres, and the potential restoration cost is estimated to be $20,000,000. The line could be restored for as little as

$12,000,000 but would be subject to running speeds of 40km/h or less. This would further reduce the capacity to run trains to one service in each direction per hour.

Finally, Mullumbimby to Yelgun spans 9.736 kilometres, with an estimated restoration cost of $15,000,000. This includes the cost of a new station at Yelgun. The lowest cost of restoration would be $12,000,000, however this would create significantly lower running speeds.

It is important to remember that these are maximum costs and factor in the significant fluctuations in price in the construction industry currently. Any savings would be passed on in order to reduce the total project costs.

Innovation is Key

During the study we were approached by a number of companies trying to bring innovative rail products to the Australian market. Some of these are already in use in Australia on a smaller scale, whilst others are in the process of proving they meet Australian Standards.

There are many challenges in the Australian Rail market which drive up price, so many of these companies have not been able to get a start in Australia or have been limited to private railways such as those operated by mining companies.

It is estimated that using innovative products could reduce the final costings by up to 20%, if not more. In addition, innovation is likely to significantly reduce annual maintenance costs.

Future Opportunities and Development Considerations

During the degradation study, we also identified several exciting opportunities for future development. These opportunities include:

- The proposed Tyagarah Station and Development.
- Upgrading loops at Bangalow, Byron Bay, and Mullumbimby.
- Upgrading Yelgun for mass crowd management.
- Platform extensions to accommodate six-car trains.
- Second platforms at Bangalow, Byron Bay, Mullumbimby, and Yelgun.
- The potential addition of another station between Mullumbimby and Yelgun.
- Considerations for park and ride facilities.
- An integrated transport strategy for optimal connectivity.

Thanks to NRRL

We would like to thank Northern Rivers Rail Limited (NRRL) for their assistance with volunteers throughout this study. Their volunteers went through a comprehensive induction and complimented our own teams by assisting with clearing some of the line.

NRRL also took on the licence from Bangalow to Lismore due to the limitations in the number of kilometres we could have under licence at any one time. This meant we could do one continuous study from Lismore to Yelgun.

Employment Opportunities
The study also considered the number of contractors and employees required to undertake the reconstruction of the line and then continue the ongoing maintenance.

Final costings are based on 10 permanent employees with newcomers to the rail industry being given an opportunity to complete formal training in rail infrastructure.

During the construction period it is also proposed that up to 20 additional jobs would be created through contractors.

Integrated Transport
Whilst not part of the scope, it was identified that there was room throughout many parts of the corridor for bike/walking/horse riding paths. Cycling and walking could be easily integrated into the train network to provide a range of leisure and tourism options.

It was also noted that there were options for cyclists, pedestrians, and horse riders to bypass tunnels on an operational network, so there is no need for these to be a barrier to a shared corridor.

Conclusion
The completion of the Lismore to Yelgun Degradation Study marks a significant milestone in the effort to restore the railway line. Through meticulous inspections, comprehensive records, and the expertise of railway professionals, we have gained valuable insights into the potential scope, costs, and future opportunities for the restoration project. Moving forward, we will continue to work towards the realization of this long-awaited revival of an important transportation link.