



**Garnaut Climate Change Review
Forum 5 – Issues Paper Submission
11 April 2008**

Table of Contents

Summary	3
Background	5
Emissions trajectory	5
Modal Shift Benefits	5
Future Emissions Pathway	7
Policies for low cost freight transport emissions	8
Infrastructure Investment	9
Land Availability	10
Security of Land Tenure	10
Asset Depreciation	11
R&D Incentives	11
Congestion Charges	11
Appropriate Truck Sizes	11
Mandatory Rail Use Target (MRUT)	12
Rail Access Pricing	12
Path Forward	13

Summary

Australian transport emissions are increasing at a dramatic rate and at a rate greater in scale than national emissions. With forecast national emissions increasing by Kyoto obligations of 8% between 1990 and 2012, transport emissions increases are significantly out of proportion and have instead increased at a rate of 29% between 1990 and 2005. In a world where there is an urgent requirement to reduce emissions by large amounts, the transport sector with its emissions growth rate will require significant focus and support to move to a negative emissions trajectory and assist Australia in achieving emissions reductions targets.

The freight transport sector needs emissions cuts of 60% to 70% by 2020 to meet the national emissions reduction trajectory. Cuts of up to 97% will be needed by 2050. The role of rail in providing the solution in the freight transport sector to achieve these cuts is critical and must not be undervalued. The road transport industry will not be able to provide cuts of this quantum and therefore early modal shift from road to rail must be a national priority.

Rail transport has a third to half of the emissions of road transport and can provide immediate and large emissions cuts if supported with appropriate infrastructure and policies. Appropriate policies to support further reduction in rail emissions will assist the achievement of drastic long term emissions reduction targets.

The benefits of rail in providing a low emissions rail solution are globally recognised. The United Nations Intergovernmental Panel on Climate Change in their AR4 report released in late 2007, support the use of rail as a transport policy for emissions reduction.

Australia cannot afford to wait for emissions trading to send the high price signal required to drive modal shift. This will only cause a delay in providing an immediate and rapid emissions reduction trajectory for the transport sector.

Early action is required not only to address the pressing threats from climate change, but to allow the structural adaptation required to provide a low emissions pathway for the transport sector and Australia. Policies that will increase the price differential of road and rail but also address systemic problems with current transport planning and policies are urgently required

Such policies should include:

Infrastructure Investment – to improve rail service quality and competitiveness with road that meets market requirements and rail market growth. This must be part of an integrated national transport plan.

Land Availability – the release and zoning of land for transport to provide terminals and corridors in metropolitan areas to grow capacity and provide service quality.

Security of Land Tenure – by increasing lease periods of terminals and infrastructure and provide security from third parties seeking access. These will increase investment certainty and encourage increased investment in transport infrastructure.

Asset Depreciation – to encourage early investment in newer low emissions locomotives and the retirement of less emissions efficient equipment.

R&D Incentives – to provide 100% rebate on R&D activities in emissions reduction initiatives in cash form to assist the cash flow of parties involved in research.

Congestion Charges – on key corridors or metropolitan areas to assist modal shift to rail.

Appropriate Truck Sizes – to ensure the benefits of large trucks in the most appropriate situations and not at the expense of the mode best suited for the task.

Mandatory Rail Use Target (MRUT) – to set targets for mandatory rail use as already done by the Victorian and NSW state governments, but with supporting policies to ensure success.

Rail Access Pricing – to provide rail access price relief to rail to encourage modal shift to rail.

It is submitted to the Garnaut Climate Change Review that:

1. **There is a need for urgent early action in reducing transport emissions.**
2. **An integrated national transport plan is essential for halting the increase in transport emissions.**
3. **The policy instruments submitted are needed to support modal shift and the required investment.**
4. **Investment in rail infrastructure must be increased to allow it to provide a viable low emissions solution for Australia and meet market service quality and capacity requirements.**

Background

Australian transport emissions are increasing at a dramatic rate and at a rate greater in scale to national emissions. With national emissions increasing by Kyoto obligations of 8% between 1990 and 2012, transport emissions increases are significantly out of proportion and have instead increased at a rate of 29% between 1990 and 2005. In a world where there is an urgent requirement to reduce emissions by large amounts, the transport sector with its emissions growth rate will require significant focus and support to move to a negative emissions trajectory and assist Australia in achieving emissions reductions.

Transport emissions from cars, trucks, trains and aircraft are all increasing and the two key markets for these emissions are the transportation of passengers or freight. Growth in emissions from road transport is projected to be seven times higher than all other forms of transport, between 2010 and 2020, and it is this road transport emissions growth that can be reduced through appropriate modal shift to rail.

The benefits of rail in providing a low emissions rail solution are globally recognised. The United Nations Intergovernmental Panel on Climate Change in their AR4 report released in late 2007, support the use of rail as a transport policy for emissions reduction.

This submission will focus on freight transport policies, but many of the issues for passenger or freight transport are similar. The proposals put forward for consideration are not necessarily mutually exclusive for these two transport markets.

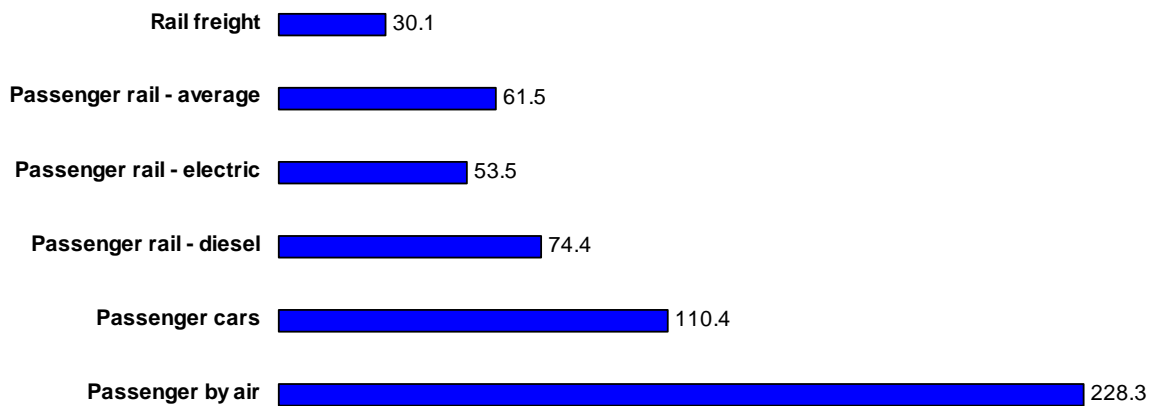
Emissions trajectory

Australia has a challenging task to reduce the forecast dramatic increase in transport emissions, while at the same time not constraining economic activity as a result of prohibitive transport costs. Modal shift to lower emissions transport such as rail can assist in achieving the necessary emissions reduction.

Modal Shift Benefits

The low emissions benefits of rail transport are significant, with rail emissions one third to a half of the emissions from road. While the information below is from the United Kingdom, which has different emissions factors for electricity generation, it highlights the immediate emissions reduction benefits available from modal shift.

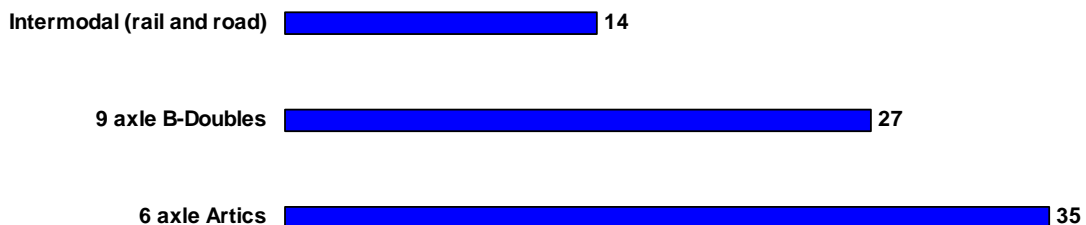
Average CO2 emissions by transport mode (grams per passenger/freight tonne kilometre) - United Kingdom



Source: UK Case for Rail 2007

In comparing rail freight emissions with road freight, and including additional emissions for rail with road pick up and delivery of goods at the origin and destination, rail provides a marked emissions reduction benefit for the same quantity of goods moved.

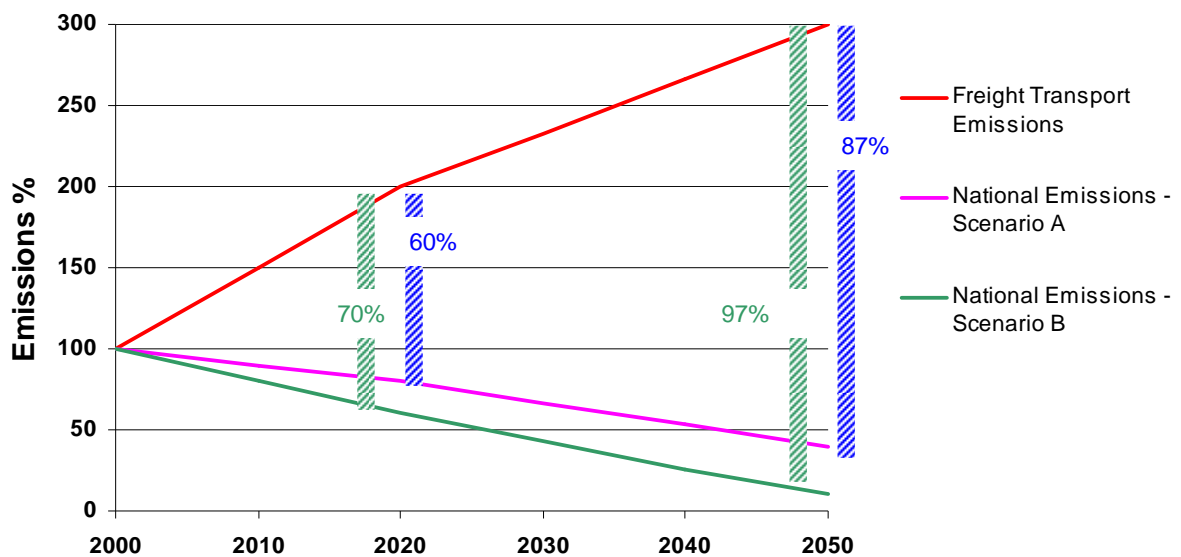
Average Australian CO2-e emissions Road and Intermodal Rail Freight (grams per net tonne kilometre)



Source: QRNA Oct 2002 Report – Comparison of Greenhouse Gas Emissions by Australian Intermodal Rail and Road Transport

The modal shift benefits of rail cannot be under valued. With the freight transport task to double between 2000 and 2020, this increases the quantum of emissions cuts required in the freight transport sector to meet national emissions reduction targets. It will not be possible for road transport to provide the reductions required. The diagram below shows the extent of emissions cuts needed for freight transport in 2020 and 2050 to meet low and high national emissions reduction targets.

Emissions Gap - Freight Transport BAU vs National Emissions Reduction Scenarios



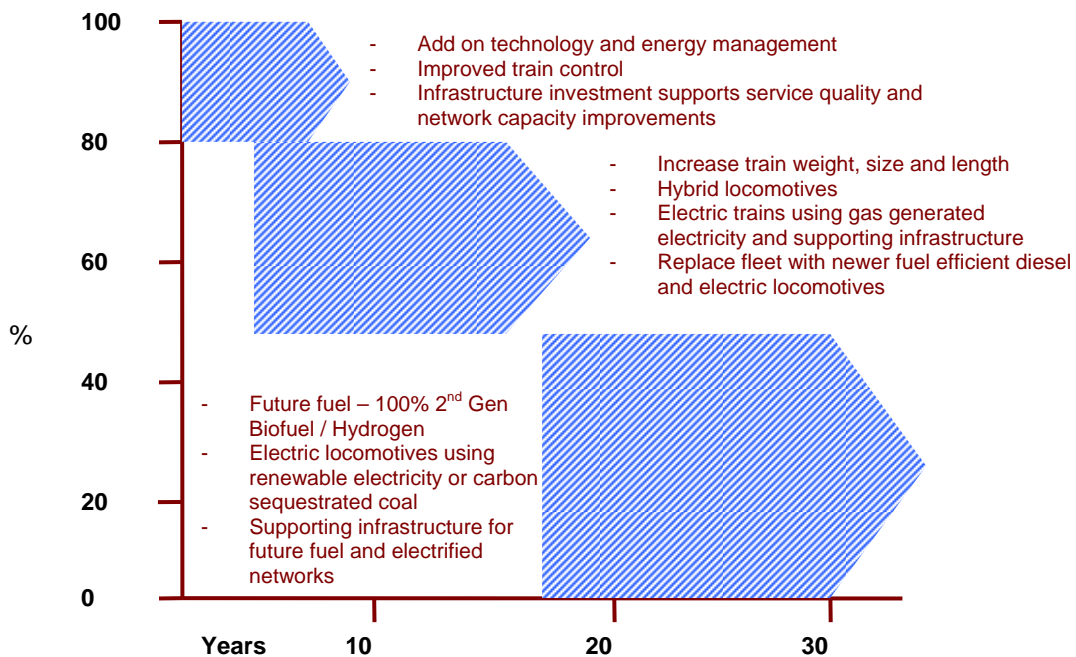
With rail emissions 66% to 50% lower than road, rail can provide the scale of cuts required and meet 2020 targets if supported with appropriate infrastructure and policies.

Future Emissions Pathway

To meet 2050 emissions reduction targets, rail is in a position to provide further emissions reductions.

There are a number of existing technological options for rail to reduce emissions from their current levels per unit of goods transported. The options involve investment in above rail operations in the operation of trains and below rail investment in the supply of rail network. The following diagram shows options that will reduce rail emissions and allow these to provide a freight transport solution for Australia that meets 2050 national emissions reduction targets.

Rail Emissions Reduction Options showing Percentage Emissions Reduction and Implementation Timeframes



Policies for low cost freight transport emissions

Policies to support early change to low emissions solutions are needed in the transport industry. The rail market experience is that unless it has the infrastructure to meet market service quality requirements, the price differential between road and rail will need to be quite high, before significant modal shift occurs. Conversely, it is the rail experience when rail costs have increased and closed the gap between road and rail, rail market volumes quickly transfer to road.

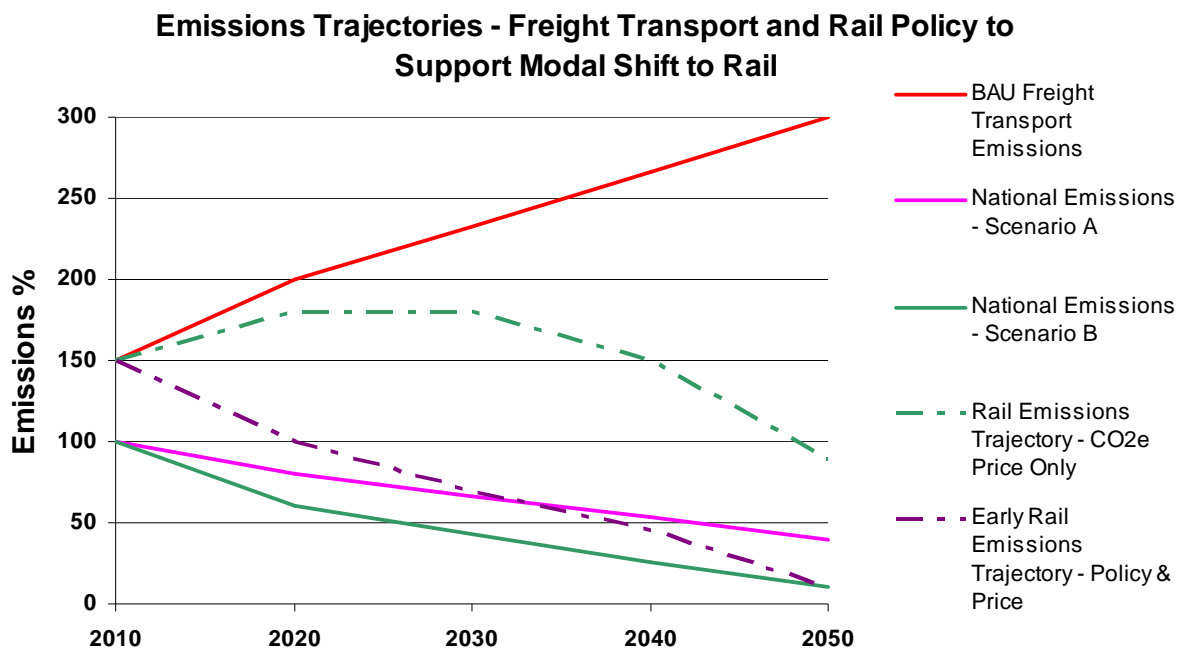
An emissions trading scheme cost will increase the price differential between the two modes over time. Delays in waiting for the price point at which significant modal shift occurs, will only serve to delay the early emissions cuts required to reduce transport sector emissions and allow the achievement of national targets.

Therefore, policies to support modal shift prior to any emissions price signal are required. The diagram below shows the freight transport emissions at its current business as usual (BAU) trajectory, and the national emissions targets with a low and high reduction path trajectory.

In waiting for emissions price signals only, the freight transport emissions trajectory risks being delayed. Without clear policies on planning, or to support investment and infrastructure, the downward curve of the emissions trajectory will be uncertain. With

suitable supporting policies, early action in reducing emissions will occur and allow a greater contribution in meeting reduction targets.

The current example of the coal ship queues in Australia indicates the result when supply chains are not supported by policy, planning or investment certainty and instead rely on price signals. The lag effects in investing in supply chain infrastructure and changing processes and the lack of integrated planning have resulted in lost economic opportunity and additional cost.



Infrastructure Investment

The key attributes of service quality for rail are service transit time and service reliability. Service transit time is the ability of the particular service to meet its planned transit time and for these transit times to meet market capacity requirements. Service reliability of on-time departures and arrivals through the whole supply chain are important in ensuring complex supply chains function well, and that trains are able to meet follow on transit departure windows.

Currently rail has difficulty in providing the service quality it requires to gain market share from modal shift. Transit times for the carriage of freight between capital cities in Australia are not competitive with road. Market requirements for freight delivery at certain times and or on certain days can condense rail traffic into peak periods, placing a strain on infrastructure capacity that can negatively affect transit times and reliability. With limited alternative route options in the event of disruption to the rail network, transit times also suffer.

The reliability in being able to provide on time freight departure and arrival in the supply chain is also critical. Rail's ability to provide reliable services that can deal with track maintenance, incidents affecting track network access, weather effects and changes to the planned operation is critical.

With significant investment earmarked for road construction and improvement versus the investment commitment for rail, the service quality competitiveness of rail is currently at a disadvantage.

The National Transport Commission's (NTC) February 2008 paper, *A New Beginning*, is an admission of the previous failings of an integrated transport planning framework in Australia. This NTC report is welcomed as it recognises the need for integrated planning on a national scale. The lack of integration between transport modes, and ineffective planning for freight corridors and whole of supply chain planning has led to a network of individual transport plans that have led to capacity constraints.

Significant immediate increases in investment in rail infrastructure to improve service quality and to provide capacity for the large modal shift from road to rail is required to achieve national emissions reduction targets.

Land Availability

To grow the capacity of freight rail and meet market growth, there is an urgent need to increase the availability of land for terminals. Identifying and zoning land for transport use would be a powerful supporting policy.

Government land releases should set aside and rezone portions of land available for transport corridors and supporting terminals. Such action would be low cost with the only cost to government being the lower revenue they may receive from leasing/selling this land for transport use than for other development use.

This single policy would contribute greatly in supporting the capacity growth and service quality of rail.

Security of Land Tenure

The security of land tenure for transport infrastructure and supporting freight terminals must be increased. Longer leases are needed to encourage the significant investment required to develop these terminals to provide capacity and improve efficiency. Security from third parties seeking access also needs to be resolved as such issues create investment uncertainty.

Companies will be reticent to invest in infrastructure if this only then supports competitor claims to its use. Clear policy to provide longer term lease options, security of tenure and access to infrastructure assets, is needed to support a national transport plan.

Asset Depreciation

The rail industry operates under very long investment periods for high cost rollingstock. Encouragement for early investment in more efficient and low emissions rollingstock prior to any pricing signal is required. Changes to reduce current depreciation times of 20 to 30 years to much shorter periods, would improve the financial justification for earlier technology change.

To encourage early retirement of a large locomotive fleet and its replacement with newer lower emissions locomotives, financial incentives through taxation policy are required.

R&D Incentives

Amendment of the current research and development incentives would assist the industry develop lower emissions technology. Introducing a mechanism to provide 100% rebate on R&D activities into the greenhouse emissions reduction initiatives would encourage innovation in this area.

The New Zealand government has introduced a cash back system for loss companies that engage in R&D activities. The argument is if a company is in a loss position, there is no incentive for it to allocate budget for R&D activities. Instead of waiting for years to recoup the tax benefits of R&D (which might not eventuate) it is more beneficial for these loss companies to obtain cash benefits upfront. This will undoubtedly assist them in terms of working capital. Therefore, potential successful R&D activities will be encouraged to fruition. This will benefit the Australian tax system and the Australian society as a whole.

Congestion Charges

Key road transport corridors experience congestion and this will increase with time. The London congestion charge has assisted shifts to public transport in that city. Applying a similar congestion charge either for key road transportation routes or for large truck entry within metropolitan limits, would encourage modal shift to rail.

Appropriate Truck Sizes

The introduction of B Triple trucks in Australia has benefits in moving large quantities of goods with lower emissions. Nevertheless, the carriage of the type of goods most likely carried by B Triples between capital cities is such that these could equally be transported by rail with lower emissions.

The United States has banned B Triple truck movements on federal interstate highways due to safety concerns and on the grounds that these goods can equally be carried by rail. Indeed the carriage of large quantities of goods long distances is the core strength of rail.

In seeking low emissions modal choices, and addressing other externalities such as road congestion, air quality and safety, the most appropriate modal choice must be

used for each market. In some cases larger road vehicles will provide justifiable advantages in relieving congestion in port areas or a low emissions solution in the carriage of goods in areas not supported by rail. Further investigation on a policy regarding road vehicle sizes to encourage larger vehicles in the most appropriate circumstances is required.

Mandatory Rail Use Target (MRUT)

The Federal government has introduced a key instrument to drive behaviour outside of the emissions trading scheme. The MRET (Mandatory Renewable Energy Target) as imposed on the energy generation sector with a 20% MRET by 2020, has given a clear signal to this industry well before any emissions trading price signal is available.

An MRUT is an equally viable instrument to drive road transport to rail. Currently Victoria and New South Wales state governments have MRUTs for rail to and from ports. The NSW government has set a target of 40% of freight on rail to and from Port Botany by 2010. The Victorian government has set a MRUT of 30% freight on rail to and from Victoria's ports by 2010.

These State targets are unlikely to be achieved through lack of appropriate rail infrastructure investment, terminal access and capacity, road charging mechanisms, and other policies to drive freight from road to rail. This reinforces that supporting policies on rail infrastructure transport planning, terminal land availability and security of tenure are needed.

Restrictions in road vehicle movements or costs to access ports would also assist in driving modal shift to meet the MRUT.

Extension of such a scheme to key interstate freight corridors would require similar supporting transport planning policies. Consideration is also needed on whether financial penalties or incentives would be appropriate tools to encourage accurate compliance and reporting and increase the price differential between road and rail to drive this modal shift to achieve the MRUT.

Membership inclusion to the scheme would also need to be carefully designed but could include any company that has a distribution task over a certain threshold between the capital cities.

Rail Access Pricing

Rail access prices add significant costs to rail operations and make up approximately a third of operating costs for rail freight companies. Rail network providers in Australia seek a positive return on their rail network investment, and this situation leads to high costs for rail operators in using rail infrastructure and or underinvestment in the rail network.

The road industry is in an enviable position where it does not have to pay to access roads at a rate that covers the full cost and also provide a positive return to the road owner.

This pricing disparity between the two transport modes has served to protect the road industry and reduce the price differential between road and rail. Either government access price relief to rail, or increased road user charges for road freight transport would provide an immediate price incentive to encourage modal shift and a low freight transport emissions trajectory.

Path Forward

Modal shift has a significant ability to provide immediate and large emissions cuts for the transport sector. The rail industry has the ability to further reduce its emissions using a number of existing technologies and current and future fuels to meet longer term national emissions targets.

Early action is required not only to address the pressing threats from climate change, but to allow the structural adaptation required to provide a low emissions pathway for the transport sector and Australia.

It is submitted to the Garnaut Climate Change Review that:

- 1. There is a need for urgent early action in reducing transport emissions.** Delays in waiting for price signals to drive market behaviour and drive the large structural changes required, will delay these transport emissions reductions and impose unnecessary increased emissions costs on society. As climate change and its threat to the human species is an example of market failure, the excessive delays in price signals driving change in a transport sector with increasing emissions levels, will be a failure of the emissions trading scheme in achieving the required outcomes.
- 2. An integrated national transport plan is essential for halting the increase in transport emissions.** This will provide the capacity required to reduce emissions and improve the service quality of supply chains to provide efficient modal change. This includes a need to evaluate the future transport fuel options and provide the respective supporting infrastructure.
- 3. The policy instruments submitted are needed to support modal shift and the required investment.** Policy to: allow early structural adaptation of infrastructure, assets and fleet changes; change societal behaviour; provide additional financial frameworks to respond to the rapid technological and structural changes faced by transport companies are matters of utmost urgency.
- 4. Investment in rail infrastructure be increased to allow it to provide a viable low emissions solution for Australia to meet market service quality and capacity requirements.**

For further information, please contact Craig Wilson.

Craig Wilson
Manager Environmental Sustainability Planning
Asciano
Ph 02 8484 8000
Mob 0404 048 784
craig_wilson@asciano.com.au