Road & Rail Freight

Infrastructure Pricing

Submission to the
Productivity Commission

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Executive Summary

The complexities and distortions within road and rail freight pricing regimes have been extensively debated over many years. An effective solution that balances the interests of all stakeholders has not yet been developed.

Pacific National believes that this solution can only evolve from a focus on the long-term freight transport needs of Australia's transport customers. As identified in the AusLink White Paper, Australia's freight task is set to double by 2020, and all stakeholders acknowledge that road cannot cope with all of the additional tonnage.

The question is: how do we strike an appropriate balance and make optimal use of our overall land transport infrastructure? While there is debate around the detail, again there is general agreement that this cannot be achieved with the current approach to transport pricing and investment.

Rail often has a significant basic cost advantage over road, as demonstrated by two case studies presented in this submission – the Sydney to Brisbane inter-capital city freight corridor, and the projected timber haulage task from Penola in South Australia to Portland in Victoria. This cost advantage reality is currently masked from customers by an inefficient, blunt road pricing regime, which significantly undercharges the heaviest vehicles that compete directly with rail.

Pricing decisions cannot sensibly be divorced from strategic modal infrastructure decisions and they cannot be the leading arbiters of those decisions. We believe that we need to start at a different point if the debate is to be advanced rather than continue to be stalled.

Pricing is important because it can guide decisions that are made about use of infrastructure, and can help signal efficient investment decisions. Additionally, sensible prices allocate at least some, if not all, of the burden of financing, and therefore are also important in ensuring that services are paid for by those who benefit from them, and hence are best placed to judge their value.

In transport, prices are badly distorted, and that affects use, investment and financing. A path is needed to remove the distortions, or at least reduce them. However, it is clear that will take time. A number of institutional and political obstacles need to be overcome before this can be achieved.

It is, however, possible to take action now to put modal choices on a more efficient footing. This is critical as inefficient investment decisions can be even more costly than inefficient use decisions, because inefficient investment choices may lock in inefficient patterns of use for many years to come.

The good news is that the Australian Government already has in place a framework within which pricing issues can be addressed as part of a strategic approach to land transport infrastructure. Despite the current limitations of AusLink, this process can be modified to provide more efficient, competitively-neutral outcomes for freight market transport challenges in key corridors.

There are also a number of regulatory barriers to rail efficiency. PN believes there are a number of improvements that can be made to rail's regulatory regimes;

- processes to encourage efficient and coordinated investments from above and below rail and where appropriate different parts of the chain
- modifications to competition policy and regulation regimes to enable regimes to operate over the whole supply chain instead of individual chain components; and
- options to facilitate long-term investment certainty. For example, PN is only able to secure short term access agreements (and associated short term certainty on price and paths agreements) in some jurisdictions, despite rollingstock investment horizons which are typically 20 years or more.

1.0. Rail's basic cost advantage – recent case studies

There is broad agreement that there are currently significant differences in the pricing approach taken to rail and road transport modes. These differences are adequately summarised in the Commission's Issues Paper. But do these differences matter in a practical sense, impacting on customer's choices in particular freight markets and on particular transport corridors? To provide some insight on this important question, Pacific National commissioned Charles River Associates to complete an economic and social cost analysis of road and rail for two specific corridors:

- The Sydney-Brisbane inter-capital city general freight corridor
- The Penola to Portland timber haulage corridor in South Australia and Victoria

The full CRA analysis is included in this submission as Attachment 2. A summary of the key conclusions is presented here.

1.1 Sydney to Brisbane

The Sydney – Brisbane corridor carries freight originating or terminating in Sydney as well as freight originating or terminating in Melbourne. The freight is generally non-bulk, although there is some break-bulk steel traffic carried mainly on rail. The non-bulk freight consists of low density cubic (high volume), palletised, and denser containerised elements. Freight on this corridor is directionally imbalanced, with larger volumes travelling north. The analysis focused on the denser, usually containerised component of the non-bulk freight, which is the most contestable between road and rail.

In summary, the analysis showed a significant basic cost advantage for rail. The pure linehaul component of rail usage costs ($21.60/'000 ntk) is less than half that for road ($44.91/'000 ntk) on this corridor. When termination-related usage costs are included, rail maintains a significant cost advantage per ntk (rail=$32.04/'000 ntk, road=$47.82/'000 ntk). Including accident and greenhouse gas externalities makes the comparison slightly more favourable to rail.

In addition to the variable usage costs, there are three areas of capital cost, termed in this analysis 'availability' costs. These categories relate to the provision of vehicles, linehaul infrastructure and terminals.

Rail vehicle availability costs at typical utilisation ($2.86/'000 ntk) are significantly lower than for road vehicles ($9.00/'000 ntk). This difference is attributable in part to the greater capital cost efficiency of rail vehicles (more carrying capacity per dollar of capital cost), but also to the longer effective asset lives for rail vehicles.

In the Sydney – Brisbane base case, the upper bound rail infrastructure availability cost estimate is $52.49/'000 ntk at the estimated 9.7% infrastructure utilisation level (noting that this already includes the investments planned by the ARTC, but based on existing traffic levels). The lower bound road cost estimate is $58.56/'000 ntk. In other words, although the total road cost is somewhat uncertain, the highest rail cost estimate is 10% lower than the lowest possible value for the road cost (which is derived by assuming that road infrastructure is available to freight operators at zero cost). With any reasonable attribution of road availability costs to freight vehicles, this gap would be significantly greater.

1.2 Penola to Portland

The so-called 'Green Triangle' region of South Australia, centred around Mount Gambier, contains numerous softwood plantations that have been producing woodchips and timber for many years. Additionally, hardwood plantations established within the past two decades are expected to begin producing woodchips, logs, and sawn timber in large quantities from about 2007. Much of this new produce, including pulp to be produced from the woodchips, is likely to be exported. There are established wood processing facilities in the region, a new pulp mill at Heywood, Victoria, and the possibility of a new pulp mill at Penola.

It is projected that several million net tonnes per annum of woodchips, logs, sawn timber, and pulp may need to be transported to Portland, Vic. for export from 2007. Given the magnitude of this task, serious consideration is being given to rail as a complementary transport mode to road, which would continue to play an important role in any case.

For Penola to Portland, despite a comparatively short haulage distance (170 km), the cost differences between road and rail are even more marked than for Sydney to Brisbane. The pure linehaul component of rail usage costs ($24.87/'000 ntk) is less than one half of that for road on this corridor ($64.52/'000 ntk). Including accident and greenhouse gas externalities makes the comparison slightly more favourable to rail.

Rail vehicle availability costs at typical utilisation ($3.38/'000 ntk) are significantly lower than for road vehicles ($33.17/'000 ntk). In the Penola – Portland base case, the upper bound rail infrastructure availability cost estimate is $43.67/'000 ntk at the estimated 20.5% infrastructure utilisation level. The lower bound road cost estimate is $99.50/'000 ntk. In other words, although the total road cost is somewhat uncertain, the rail cost estimate is less than 50% of the lowest possible value for the road cost (which is derived by assuming that road infrastructure is available to freight operators at zero cost).

While Pacific National recognises that non-price factors do play a significant role in customer's modal choices, the clear basic cost advantage of rail in these case studies (which is being partially masked by distortions in the current price settings) demonstrates rail's potential to take on a greater share of the freight task in key transport corridors.

2.0. Flaws in the current road pricing regime

The outcome of nearly all reports and studies of road pricing over the past 25 years has been broadly the same: that increases in some form in heavy vehicle road user charges are justified. As far back as 1979, a Commission of Inquiry into the NSW Road Freight Industry was established by the NSW Government in response to a series of truck blockades on the Razorback Range south of Sydney, which blocked the Hume Highway for some days; the truck drivers were protesting at the then road maintenance charge (a mass-distance charge) levied on all heavy vehicles as a contribution to road wear-and-tear damage. A brief history of the studies and inquiries into road pricing is outlined in Attachment 1.

The deficiencies of the current road pricing approach are comprehensive, and include problems with the methods used to estimate, allocate and attribute costs. The ultimate flaw is the overtly political nature of final decisions on pricing modifications and investment.

2.1 Cost Allocation and Attribution Issues

According to the NTC, Australia currently spends more than $10 billion on roads every year. Of this figure, the NTC believes that heavy vehicles should be allocated between 16 and 18 percent of costs. The remainder of costs are shared between passenger car owners, and governments, who pick up the multi-billion-dollar bill for expenditure which is deemed as unrelated to vehicle use.

Pacific National believes the NTC's methodology allocates a smaller than appropriate proportion of total road costs to vehicle use. There are further problems with the measures used to attribute costs to particular vehicle classes, which have the effect of minimising the level of costs allocated to the heaviest trucks. There is also a question-mark over the treatment of non-attributable, or common costs.

2.1.1 Local Road Expenditure and Use

There continues to be considerable uncertainty around the NTC's calculations and allocations in relation to local road expenditure and road use.

In its Third Determination discussion paper, the NTC acknowledges the weakness in analysis underlying this substantial component of overall road costs.

> *A number of assumptions are needed about how much of local road expenditure is spent on different types of road work as very little data is available on this. The shares in this paper are based on the average shares for arterial roads.* [1]

Using arterial road averages for local roads is clearly unsatisfactory, and addressing this serious data gap should be a priority for any future pricing processes.

For the Third Determination, the NTC excluded $2.87 billion per annum of local road expenditure from the calculation of road user charges, a major increase on the $1.27 billion per annum excluded in the Second Determination. To put this figure in context, it is significantly greater than the amount allocated to heavy vehicle for their total use of all roads in Australia. The NTC argued that this expenditure was excluded because "it

[1] *NTC Third Heavy Vehicle Road Pricing Determination – Draft Technical Report, July 2005, P 4*

does not relate to providing road services to motorised road users".[2]

Pacific National has significant concerns with the process by which the NTC arrived at this conclusion. The calculation of local road use is based on survey estimates provided by road engineers from 7.5 percent of local Councils. The excessive reliance on opinion is inappropriate for such a substantial road cost category. The NTC itself acknowledges that development of a separate cost allocation template would be a preferable approach.[3]

Much of the excluded cost is in areas like curbing, guttering, all-weather access and vegetation. The approach is also inconsistent with road's main competitor, rail operators, who are required to cover these equivalent costs in their access charges.

2.1.2 Attributable Costs

Pacific National believes that if the current approach to road pricing is to continue, a number of cost items within the NTC methodology require re-classification.

For example, heavy vehicle enforcement expenditure is currently excluded from the cost base for heavy vehicles, contrasting with the approach in rail, under which PN and other rail users are required to cover the costs of systems to monitor mass and speed limits.

The NTC allocations vary markedly from other jurisdictions also using traditional equity approaches. For example, the NTC allocates 85 percent of bridge construction costs by vehicle kilometre traffic (VKTs), and 90 percent of land acquisition and earthworks by this measure. By contrast, in the UK, 85 percent of bridge construction costs and land and earthworks are allocated by passenger car units (PCUs).

In the area of reseals and road rehabilitation, 100 percent of these costs are attributable in the UK, and allocated using equivalent standard axle loads (ESALs). By contrast, 50 percent of the cost of reseals and 55 percent of the cost of road rehabilitation are non-attributable in Australia. In its technical paper, the NTC acknowledges that pavement rehabilitation and new construction "are believed to relate to the need to provide for pavement strength and repair deep-seated pavement wear associated with the loss of strength in the pavement as it is subject to loads"[4]. Yet its cost allocation rule still only attributes 45 percent of these costs to road use.

The NTC does not appear to have completed any detailed analysis of the UK model, which appears to allocate the majority of costs using different cost allocation principles. The NTC puts these international differences down to "different environments, road types and administrative arrangements."[5]

The NTC has taken a confusing approach to the issue of routine and periodic maintenance. During the Third Determination process, it undertook analysis of the relationship between pavement maintenance and road use. This research was not conclusive, but suggested that routine and periodic maintenance were related to tonne-kilometre traffic and to a lesser extent, passenger car equivalent units. This conclusion differs from what has been found in the UK, which by contrast, allocates 40 percent of routine maintenance by ESALs.[6] The most confusing aspect of the NTC approach to

[2] *NTC Third heavy Vehicle Road Pricing Determination – Draft Technical Report, July 2005, P4*
[3] *Draft Technical Report, P15*
[4] *Draft Technical Report, P87*
[5] *Draft Technical Report, P33*
[6] *UK Department of Transport, NERA Report on Lorry Track and Environment Costs, 2000*

this cost item, however, is its decision following this research to excise 26 percent of routine maintenance and 30 percent of periodic maintenance from attributable costs. The reason was its belief that weather effects on roads were not related to road use.

2.1.3 Non-Attributable (common) costs

As indicated above, Pacific National believes there is considerable scope to re-classify a number of cost items as attributable. This move would significantly reduce the level of non-attributable or "common" costs.

The basis for allocating common costs should also be re-examined. Currently, the NTC allocates non-attributable costs using VKTs, which basically treat a car and a truck in the same way. The basis for this is that non-attributable costs "would be incurred regardless of the level of use of the road network (and therefore regardless of the need to provide additional capacity)".[7]

Even if this is correct, it does not follow that VKTs provide the best key for allocation of these common costs. Rather, the NTC needs to examine which allocation approach would be most consistent with economic efficiency and maximisation of the community's welfare. For example, allocation of costs on the basis of the benefits principle might well lead to commercial users bearing a higher share of costs than their share of VKTs. So too might consideration of demand elasticities, at least to the extent to which there were rents that could be taxed in road transport.

What this means is that the NTC needs to explain its choice of VKTs as the relevant allocator. There is nothing in the mere fact that these costs are common costs that implies that they should be allocated on the basis of VKTs.

2.1.4 Externalities

It is widely recognised that there are real costs of all transport modes that are not borne directly by either operators or users.

A study of land freight external costs in Queensland in 2002 found that interstate heavy vehicles create significant cost for other road users because they cause a relatively high number of accidents, which is not the case with inter-capital freight trains.[8]

In *The Future for Freight* report, Port Jackson found that the current failure to incorporate externality costs into pricing mechanisms for road and rail delivers an approximately $6/per 1000 net tonne-kilometre advantage to road. This analysis takes into account the internalisation of a proportion of accident costs via insurance.

The NTC's Pricing Principles allow for the inclusion of externality charges, although Pacific National accepts that stakeholders in Australia are yet to agree on one estimation methodology. An option supported by Pacific National and other industry participants is to incorporate externalities in road pricing using conservative estimates, and commit to further work to refine pricing of externalities.

[7] *NTC, Third Heavy Vehicle Road Pricing Determination - Draft Technical Report, 2005, p 34*
[8] *P. Laird, Land Freight External Costs in Queensland, 2002*

2.2 Charging Mechanism

The current NTC charging system which seeks to recover allocated costs is also flawed. Other than at a small number of tolled arterial roads in major cities, Australian road users are not charged at point of use. Instead, road users pay in a more remote fashion through fuel excise taxation and registration fees. The current heavy vehicle pricing methodology provides no effective price signal for mass, distance, time, or location. The upshot is that the structure of road pricing signals is almost completely unrelated to costs.

The twin effects of lower than appropriate allocation of costs to heavy vehicles, and blunt, inadequate charging mechanisms mean that operators of heavily laden trucks traveling long distances are significantly undercharged. The distance-based impact of fuel charges is reduced because of the better fuel efficiency of these vehicles, while the cost of registration is able to be amortised over large freight volumes and long distances, over a 12 month period.

To compound this problem, Transport Ministers have maintained an explicit charging subsidy for the B-Double vehicle class. According to the NTC's own calculations, the owner of a B-Double receives a direct registration subsidy worth $10,500 per year. The NTC's Second Determination decision introduced the B-Double charging subsidy to encourage the take-up of this new vehicle, which meant B-Double charges were explicitly set at less than the amount required to recover their costs. The large increase in B-Double numbers since that time indicates that this measure was successful in subsidising the entry of B-Doubles to the market. While Pacific National questions the validity of the original concession decision, the continuation of the subsidy many years after the market entry of B-Doubles is a glaring anomaly which provides a substantial pricing benefit for the heaviest class of truck, at the expense of rail, lighter trucks and passenger cars.

2.3 An overtly political process

While the NTC is responsible for researching road costs, calculating appropriate charges and making pricing recommendations to Transport Ministers, any changes to road prices are ultimately subject to the approval of politicians. Road infrastructure pricing decisions ultimately come down to a show of hands from Ministers.

The NTC develops its recommendations over an extended period of consultation with transport industry stakeholders and government representatives. Typically, the NTC produces an Issues Paper, Draft Technical Report, and Regulatory Impact Statement before it finalises recommendations to Ministers. It is clear that the NTC's decisions about what to propose are inevitably impacted by what they believe Transport Ministers will be prepared to accept. For example, in the initial stages of the Third Determination process, the NTC was discussing the abolition of the B-Double charging subsidy. By the end of the consultation program, the NTC recommended no change to the current subsidy arrangements.

The NTC's proposed Third Determination truck price increases were essentially modest reforms which were expected to increase road operator costs, in stages, by up to three percent over two years. Although there had been a 23 percent increase in road agency expenditure between the Second and Third Determinations, proposed allocations to heavy vehicles actually represented a reduction in real terms. Despite this, Ministers chose to reject the proposal, citing pressure on the industry as a result of rising fuel prices. In other words, Ministers intervened to prevent the market from

determining modal choices on a cost-reflective basis. While this form of decision-making continues, pricing mechanisms will be unable to deliver efficient modal outcomes.

2.4 The Targeted Alternative - Mass Distance Charging

The alternative to Australia's "average" road pricing approach would require some form of individual user pricing. Mass-distance charging has existed in other countries for some time. For 15 years, New Zealand has had a basic mass-distance charging system based on licences, differentiated by vehicle type and weight, which are sold in 1000 km units. This is combined with a hubometer, which provides a reliable and accurate record of distance traveled. Switzerland has operated mass-distance charging since 2001. This is based on short-range microwave beacons to activate and deactivate on-board units, and tachograph data stored on a smartcard. Germany introduced a mass-distance charging system in 2005 for access to its Autobahn network. While each system is necessarily designed to meet local objectives and operate in local conditions, the lesson for Australia is clear. Other countries have shown that the policy objective, of ensuring that charging is directly linked to costs and use, can be met.

The increasing use of GPS technology for road user charging means that Australia will face no cost disadvantages from its relatively large distances and low densities. These technologies are already being used in Australia, for example to monitor the use of Tasmanian rural roads by logging trucks. Furthermore, the Intelligent Access Program is taking forward a voluntary system for the remote monitoring of freight vehicles, using satellite based telematic services to ensure they are complying with agreed conditions of operation.

A full feasibility study of a staged introduction of mass-distance charging should be an immediate priority for Australia's land transport planners.

3.0 Other Relevant Issues

As discussed in the previous section, distortions in the current approach to road pricing need to be addressed as part of the reform package. Correcting these, and then achieving a level of consistency with the rail pricing regimes, however, will only take us part of the way towards an efficient land transport sector.

The strategic challenge facing land transport planners is facilitating the most efficient modal mix to meet the freight market needs for each corridor, in the context of the needs of the Australian economy and community in general.

There are a number of factors, which are difficult to incorporate into direct, moment-in-time cost comparisons between modes, which nevertheless should be taken into account as part of this overall vision.

The two key factors are:

- Infrastructure legacy issues
- Network sharing between freight and passenger services

3.1 Legacy issues

Road freight has enjoyed considerable Government-funded improvements in road infrastructure over the past 30 years, which has permitted higher mass limits and consequently improved cost efficiencies. A multi-billion dollar investment program has transformed the Hume Highway, for example, from a basic two-lane sealed road in the 1970s to a high-quality, high-speed road arterial road today. Rail freight, on the other hand, has had to endure substantially the same rail network constructed in the nineteenth century with only modest improvements. Moreover, the rail networks were designed primarily to service hinterland to port movements with the consequence that the interstate routes are sometimes far from ideal. For example the Sydney – Melbourne rail route is around 100km longer than the equivalent road journey.

The legacy will inevitably be extended under the first phase of AusLink. Although AusLink enshrines a more integrated, modal-neutral approach in the medium to longer term, its funding program for 2004 to 2009 reflect a range of existing political commitments. Of the $15 billion dollar AusLink commitment during its first five years, only $1.4 billion has been allocated to rail projects. In addition to this, the ARTC plans to spend an additional $1 billion on the AusLink network, which will be recovered from rail operators. As a result, much of the benefit of the strategic AusLink rail investments will be offset by the more significant level of funding planned for the road network.

3.2 Implications of a shared network

The interplay between passenger and freight users is also an important market consideration. Although freight traffic on roads is significant, the majority of users are motorists. In NSW urban areas, cars constitute over 80% of road vehicle trips and in rural areas around 65% of trips[9]. Road access costs are shared by trucks, cars, and

[9] *RTA Economic Analysis Manual*

government agencies. The result is that trucks are not required to fund the stand-alone costs of the road network.

Many road projects are funded with passengers mainly in mind, yet provide not inconsiderable benefits to freight vehicles. The upgrades planned to improve safety on the Pacific Highway are a case in point. A dual carriageway along the length of the Pacific Highway is expected to reduce injuries and fatalities, and create more security and comfort for passenger car drivers. It is relevant to note, however, that these changes are required largely because of the presence of increasing heavy vehicle traffic. The changes will also provide direct competitive benefits to heavy vehicles by way of increased capacity and improved transit times. Because of currently lopsided network cost-sharing between trucks, car users and governments, heavy vehicle owners who benefit from this enhanced infrastructure will pay for only a small proportion of these costs.

By contrast, freight operators are expected to pick up most of the network's stand-alone cost. The reason is that although rail freight operators also share their infrastructure with passenger transport, the proportion of passenger use outside the metropolitan areas is relatively minor. There is also an additional dimension to the interplay between freight and passenger rail. Rail freight operators are impacted significantly by passenger trains when traversing metropolitan areas at either end of a freight corridor journey. Specifically, freight operators are subject to a curfew during peak commuter hours in Sydney, and an ongoing and universal requirement to give way to passenger services. Given that the average speed of passenger trains is higher than for freight trains, this can have a significant impact on the ability of the rail freight industry to operate competitively with road. The outcome is that freight trains are often "run down", and then have to wait to allow passenger trains to pass before they can proceed. The cost of passenger priority is borne by freight trains but this is not internalised into any access pricing.

While these issues underscore fundamental differences between the transport modes in Australia, they are relevant to any attempt to achieve a level playing field between road and rail, and achievement of the most efficient long-term transport infrastructure mix for Australia's freight market.

4.0 An Integrated Solution

The two case studies prepared by Charles River Associates indicate that rail enjoys a significant basic cost advantage on a number of key corridors. A more cost-reflective, targeted approach to road pricing would assist in revealing this cost advantage to transport customers, and mass distance charging is an option which should be pursued, starting with key freight corridors.

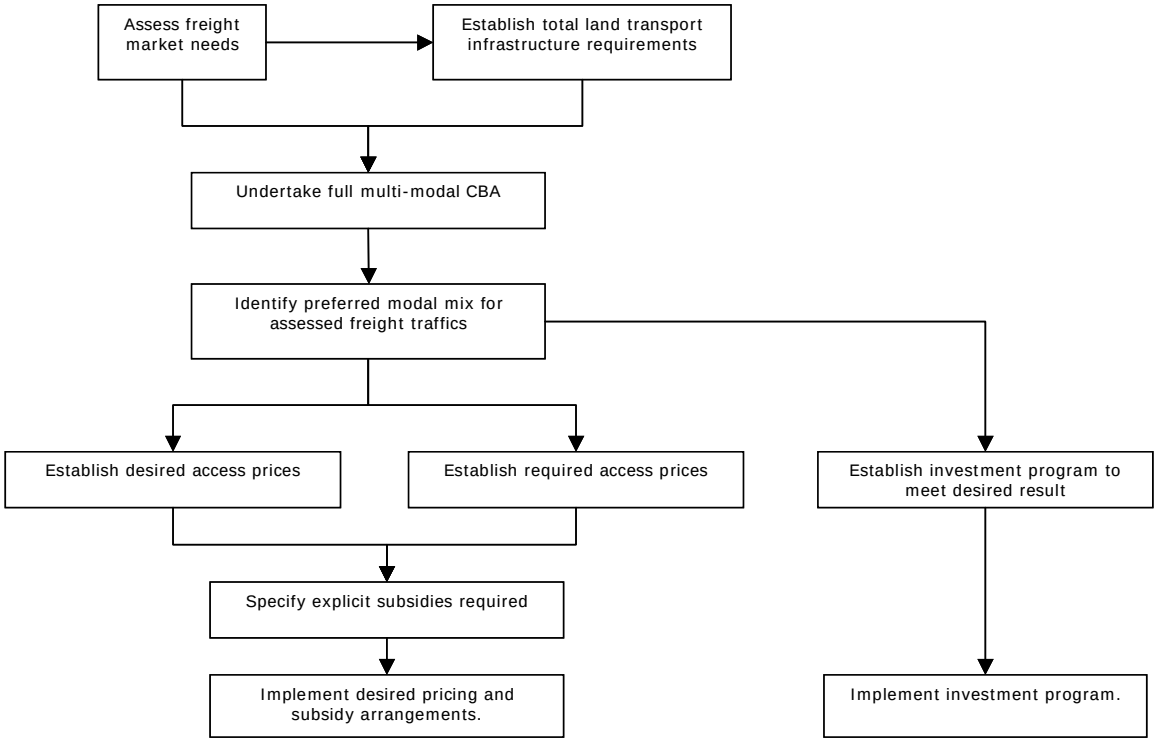
It is clear, however, that other issues, such as the involvement of governments in both land transport modes, historical infrastructure legacies, and the interplay between passengers and freight, have created significant complexity. The Australian freight transport market is one in which imperfections will be difficult to unpick and political and institutional impediments complex to remove.

The combination of these issues means that an approach which focuses on pricing mechanisms alone will not make a major difference to the land transport market. Instead, a reform approach which combines pricing, investment and transport planning in the one strategic national framework has a greater chance of success.

This reality was recognised by the Federal Government when it first introduced AusLink. Essentially, AusLink was an attempt to overcome transport market imperfections by creating an agreed strategic plan for long-term transport needs on key corridors. At this stage, although AusLink has the essential ingredients to be successful in investment planning, it has not operated in a truly neutral cross-modal fashion. As for the other side of the infrastructure equation, pricing, it is essentially divorced from the current strategic infrastructure model.

PN believes that the overriding planning goal should be to establish the right modal solution for particular traffics and then, as a second order question, discuss appropriate funding and pricing arrangements.

The model could include the following steps:



In a number of respects, this process mirrors the already agreed AusLink framework. The difference is that under this proposal, AusLink would be adapted to include an assessment of an efficient and appropriate mix of transport in key corridors via a full multi-modal Benefit Cost Analysis process. Full cost analysis of the modes on a corridor-by-corridor basis would be a key input, helping to guide decisions on an appropriate modal mix. Once optimal modal mix decisions are taken, investment decisions, feasible price settings, and levels of required government support (if any) would naturally follow.

4.1 Assess needs of key freight markets

Since the AusLink White Paper was released, the Australian Government has been seeking to improve its understanding of the future freight demands on Australia's key corridors.

Pacific National strongly endorses this general approach, which begins with a sensible examination of the relevant driver for freight transport investment decisions – the needs of the freight and passenger transport markets. The question is: how does Australia service this demand in the most efficient fashion? The response to that question must consider:

a) How to make optimal use of existing transport infrastructure, and

b) How to provide the appropriate level of capacity in each mode.

The Australian Government's efforts in this area are fully supported by the rail industry. Some efforts have been particularly forward-looking, with the BTRE's recently released demand projections for freight and passenger transport through to 2025. AusLink's corridor studies have also been looking at the medium to long-term outlook for 27 key transport corridors.

4.2 *Consider the supply component to be "land transport infrastructure" rather than separate "road infrastructure" and "rail infrastructure".*

This would be consistent with broader market definitions based on substitutability: for the purposes of general freight movements, rail and road infrastructure are competing modes of provision. Because institutional structures and funding decisions affecting each mode are fundamentally different and do not operate under "level playing field" market conditions, the starting point for any meaningful debate about infrastructure decisions should be to bring both modes together.

Again, this aligns with the philosophy underlying the AusLink process. According to the White Paper, AusLink "means increased investment in land transport, improved long-term planning, encouragement of the best ideas and solutions, and targeting investments to achieve the best outcomes"[10] It expects to achieve this through "an integrated corridor approach to planning. This new approach focuses on meeting future passenger and freight needs in the best way, irrespective of the transport mode rather than focusing on separate rail and road transport modes. This is the cornerstone of the AusLink approach to planning and funding land transport infrastructure" [11]

The results of AusLink to date, however, have not lived up to these stated intentions. The AusLInk allocations to date have been based on a mix of historic commitments, political priorities and economic and financial analysis on a project-by-project basis. A fully functioning, integrated investment assessment process has not yet been attained. Pacific National suggests that there is a very real possibility that actual outcomes will continue to conform to the previous "separate" modal models unless corridor planning is allowed to become the dominant influence on investment decisions, and pricing is incorporated into the strategic framework.

4.3 Undertake a comprehensive multi-modal economic cost-benefit analysis (BCA) process.

This is consistent with AusLink guidelines which express the requirement for infrastructure investments to be assessed on a multi-modal basis. The BCA approach is currently used in appraising individual project proposals for new investment under AusLink. However, Pacific National believes that this tool can be used more strategically in assessing medium to long term modal mix options for the entire projected freight task on each corridor.

[10] *AusLink White Paper 2005: ix*
[11] *AusLink White Paper 2005: ix*

A full cost analysis of modal options, similar to the indicative studies included in this submission, should be a fundamental element in this process. The guidelines for project appraisal signed off by the Australian Transport Council in November 2004 are a useful starting point for a BCA framework.

From Pacific National's point of view, the BCA guidelines need to take account of:

- *Levels of service.* Most road evaluations focus on travel time and vehicle operating cost savings, assuming that all marginal savings are fully realisable, with any reliability and capacity changes occurring responsively by the suppliers. Step changes in rail performance, however, usually result from a series of significant improvements, as opposed to specific individual projects. Rail achieves optimal efficiency with significant traffic volumes. Reliability and service availability are further key ingredients which are assumed to be impacted by the rail infrastructure. Again, rail investments at specific points must deliver corridor benefits and not lead to the evaporation of those benefits through inadequate performance elsewhere along the corridors. Understanding the freight markets will be critical to determining the quantum of freight which is time critical and where one mode is naturally better suited.

- *Changes in costs.* Most comparative analysis assumes that current conditions will continue into the future over the evaluation period. For key cost drivers like vehicle-driver numbers in road transport, this will increasingly become an incorrect assumption. The industry is beginning to experience significant driver shortages[12] which will worsen considerably with the expected doubling of the freight task by 2020. The inevitable result will be a steady real increase in vehicle-driver costs. While rail itself is facing skills shortages, these are not as acute. The issue, will, over time, reduce the relative advantage of road over rail, and needs to be taken into account in forward-looking BCA assessments.

- *Increases in fuel prices.* Although the recent growth in fuel prices may not continue, there is a reasonable expectation that the world crude oil price is reaching a new level around which it is expected to stabilise and that we are unlikely to return to the substantially lower prices of former years. Rail is in the process of introducing technology improvements to locomotives which will improve fuel efficiency. Trucks are probably at their optimal fuel efficiency, so sustained real increases will further disadvantage road more than rail for comparable movements.

- *Externality impacts.* While rail freight movements generate some externality impacts, there is general agreement that heavy road vehicles generate significantly more external costs on a net-tonne kilometre basis. Increasing congestion entering and exiting major capital cities, road fatalities and injuries, as well as air pollution and greenhouse gas emissions will become an ever-increasing community concern and will need to be properly accounted for in the BCA.

- *Time frame.* Evaluation periods for land transport infrastructure projects conventionally cover up to 40 years, with any residual values for unexpired asset worth taken up at the end of that period. Even if a longer time frame was adopted, say 100 years, because the assets comprise tunnels and earthworks

[12] *ATA Submission to Joint Standing Committee on Migration: Inquiry into skills recognition, upgrading and licensing*

and expectations that the demand for the facilities will continue through that time, the effect of discounting materially lowers the benefit contributions in later years. Clearly, there are considerable uncertainties about long-term future conditions, and governments are often reluctant to commit to projects which allegedly have such a long-term pay-off. Some jurisdictions have argued for lower discount rates to avoid penalising future generations for today's failure to invest in necessary infrastructure.

Considering infrastructure requirements over this sort of extended timeframe is not as extreme as it may seem. It is relevant to keep in mind that much of the alignment for Australia's rail network has not fundamentally changed in over 100 years and shows no likelihood of doing so in the next few decades.

Where the multi-modal project comparison is not properly specified, it is possible that the evaluation framework will not be able to do other than reinforce existing funding commitments, except at the margin. In short, the question needs to be asked: what land transport infrastructure network does Australia want in 100 years' time and what do we do now to ensure that we do not foreclose on those outcomes?

- *Iterative process.* Single mode infrastructure evaluations traditionally assess a static scenario, incorporating their own modal growth assumptions as appropriate. A series of prescribed project options are compared by way of a Discounted Cash Flow approach to derive the option with the highest net present value (NPV) or benefit-cost ratio (BCR).

  Multi-modal appraisals are much more complex, with changes in the relative attractiveness of one mode leading to responsive changes in the operations and performance in the other mode. These modal outcomes are likely to be different for different project options, and different optimal outcomes would be associated with different market shares, different costs and different infrastructure expenditure.

This BCA approach is at the heart of the solution. The key to improved land freight transport outcomes is establishing clearly the preferred modes for different traffics. Rather than starting with debates about price structures and levels, which have continued to remain unresolved, Pacific National suggests that the emphasis should be placed on the adequacy and condition of the road and rail infrastructure for the projected transport tasks. All of this is predicated on the basis of a properly structured multi-modal BCA approach, which takes account of the issues discussed above and reflects the ways in which each mode operates and performs.

4.4 Based on BCA results, determine the preferred modal mix for specific freight traffics.

A fully integrated multi-modal BCA evaluation approach would trigger key policy choices for government – should certain regional road and rail lines remain open, or should they be closed and freight volumes shifted to the alternative mode? Is preservation of both forms of infrastructure essential for certain corridors and regions? The outcome of this stage in the process should lead to creation of an investment program and also inform the next stages of the funding process.

The assessment would also take into account past, present and planned investment in freight modes on a particular corridor. The issue of dealing with the considerable legacy issues facing rail is a thorny one, but one that must be incorporated into any comprehensive benefit cost assessment.

A significant problem for Australian transport customers is that this legacy problem will worsen before the AusLink framework begins to make a difference. The AusLink BCA guidelines are not yet in widespread use. A sizeable level of existing funding commitments will continue to change the competitive landscape between road and rail before there is an even-handed investment approach. For example, the recent commitment to spend $220 million on the Bruce Highway, with no corresponding rail investment, seems short-sighted, given that rail currently hauls the majority of freight on this corridor.

To the best of Pacific National's knowledge these funding decisions have not been based on any understanding of the effects on land transport modes (not to mention the effect on coastal shipping) and that no BCA has been performed that would lead to the conclusion that these are the most efficient investments to be made to fulfil the projected transport demand.

4.5 Assess required access revenues and imputed access charges to cover infrastructure costs

The next step is to identify the actual revenues that are desired to be recovered from each mode taking into account the investment program and anticipated volumes on which informed the BCA. The total revenue requirement (assuming that full cost recovery is the basis of analysis) would be based on the present value of the infrastructure and externality costs and assigned freight volumes over the evaluation period.

At this point in the process, it is necessary to incorporate the various drivers of price including, for example, the political, social and environmental dimensions of access pricing, to determine what proportion of the cost should be derived from users through explicit charges, and what proportion is to be provided by explicit subsidy. Clearly the decision would have an impact on modal share and this stage becomes iterative with the BCA stage.

If the Productivity Commission supports the staged introduction of mass-distance charging, and this recommendation is accepted by COAG, the most appropriate forum for its rollout will be within the AusLink corridor process. The AusLink process is well suited to judging which corridors would benefit the most from an early introduction of mass-distance charging. It may be that the system is piloted in one geographic region, or one specific corridor. The most important priority is to start the process of individual road user pricing, to align with the existing individual rail pricing system.

4.6 *Specify explicit subsidies required to meet funding shortfall for economically justified projects and achieve preferred modal mix.*

As a result of the previous step, an explicit subsidy will be identified. The key point is that any subsidy that arises through this process will be transparent and will be consistent with the analysis used to derive the investment program. By recognising political and other constraints, it does not seek to generate an unachievable outcome, but rather identifies the underlying reasoning for investment and pricing decisions,

having treated rail and road equally in the analysis or otherwise having identified any policy biases that it has been deemed preferable to adopt.

It is critical that privately and publicly owned/leased infrastructure are treated equally in this process. The national interstate rail network, for example, consists of infrastructure owned or leased by ARTC, QR, Babcock and Brown and Railcorp. AusLink rail funding has been dominated to date by allocations to ARTC-controlled track. If the proposal in question contributes significantly to national or corridor efficiency outcomes for freight customers, governments should be willing to invest in both private and publicly-owned or leased infrastructure.

Encouragingly, the Australian Government has taken the first step to changing this paradigm with its announced commitment to partially fund the extension of eight crossing loops on privately-owned rail track between Perth and Kalgoorlie. This follows on from its earlier commitment to contribute $15 million to the privately-owned Eyre Peninsula rail line in South Australia.

More formal processes may need to be established to make these investments more common. Several access regimes applying to private infrastructure owners contain explicit methodologies which exclude government funded assets from the regulatory asset base and thereby facilitate government funding for these assets. As raised by Pacific National in its final submission to the Commission's Review of National Competition Policy in 2005, a possible approach may be the use of 'alliance' contracts with the following features:

- For larger projects, significant resources would be devoted to agreeing scope, design, and cost estimates;
- Project costs would be reimbursed on an open-book basis, providing reassurance that the costs are reasonable;
- The owner/lessor of the below rail network would receive a payment to cover its corporate overheads, and allow it a level of profit on the project consistent with comparable projects;
- The owner/lessor would share risk with the Government on actual project outcomes (cost, time etc.), and establish appropriate management structures to reflect this shared risk; and
- The risk to the owner/lessor would be capped, and perhaps limited to the loss of overhead and profit margin.

Contracts with similar features are being used elsewhere in the rail sector: for example, the Sydenham and Craigieburn electrification projects in Victoria. They would enable projects in the national network to be implemented without regard to public or private ownership. Where appropriate, the Commonwealth might want to draw on institutional capacity at State Government level to assist with implementation.

4.7 Implement desired pricing and subsidy arrangements.

The final step is to formally implement the outcomes of the process by institutionalising the pricing arrangements to derive the revenues to be funded by users and the subsidies to be provided by government. The ARTC's current corridor-specific prices would be modified to take into account any recommended subsidies from the process proposed in this submission. Similarly, the level of road subsidy on each corridor would also be specified, and mass distance charging implemented on key corridors to recover the cost shortfall once subsidies were taken into account.

Other than for some bulk rail traffics, neither road nor rail currently fully recovers infrastructure costs. Pacific National expects that this reality will continue under this proposed framework. The difference would be that subsidies would be transparent, and directed towards a preferred modal outcome to satisfy specific freight market demands.

5.0 Other Obstacles to Efficiency

5.1 Rail Regulatory Regimes

The rail industry in Australia is extremely fragmented. As Table 1 shows, there are at least ten network owners, seven regulatory regimes and six regulators across Australia.

For a Pacific National train journey from Sydney to Perth, the train works under:

- NSW Rail Access Undertaking (RailCorp)
- NSW Rail Access Undertaking (ARTC)[13]
- ARTC Access Undertaking (ACCC)
- WA Rail Access Code

A separate access contract applies under each of these regulatory instruments.

Table 1: Rail Access Regulation In Australia

Network	Track Owner	Regulatory instrument	Regulator
WA	WestNet	WA Rail Access Code	ERA
Interstate SA, WA,	ARTC (Interstate)	Undertaking (ACCC)	ACCC
Adelaide – Darwin	Asia Pacific/FreightLink	AustralAsia Railway (Third Party Access) Code	ESCOSA
SA Regional network	ARG	SA Rail Access Regime	ESCOSA
Victorian Regional Network	PN	Victorian Rail Access Regime	ESC
Victorian Metro	Connex	Victorian Rail Access Regime	ESC
Victoria Misc	VicTrack	Victorian Rail Access Regime	ESC
Mainline NSW	ARTC	NSW Rail Access Undertaking	IPART/NSW Government
Tasmania	PN but being transferred to Tas Govt	Regime under development	

[13] *Although this is currently identical to the RailCorp version it is notionally a separate regulatory instrument.*

NSW Country	RIC (Regional NSW excluding the ARTC interstate network)	NSW Rail Access Undertaking	IPART/NSW Government
NSW Metro	RailCorp	NSW Rail Access Undertaking	IPART/NSW Government
Qld Standard gauge	Queensland Rail	Not currently under any access regulation, not covered by the QCA Act.	
QR Narrow	Queensland Rail	Undertaking ()	QCA

Despite the number of regimes and regulators a key portion of the national interstate network, the standard gauge track between the Queensland border and Brisbane, remains unregulated. This is despite the fact that the track owner QR is vertically integrated and operates both above and below rail services.

These regulatory regimes are not static and evolve significantly over time. Throughout Pacific National's history there has always been at least one regulatory regime under review. Currently the Queensland, WA, Victorian, NSW and Tasmanian regimes are under review.

Without question the multiple regimes and access agreements create significant administrative cost and burden. In addition, and potentially more importantly, there are likely to efficiency losses as track owners do not efficiently co-ordinate their approaches to investment, planning and train management.

Another failing of the current regulatory system is the lack of specialist transport and logistics chain knowledge among regulators. Often this lack of knowledge results in regulatory analysis that is too narrowly focused resulting in inappropriate regulatory outcomes.

Pacific National recognises that the networks within Australia have different characteristics which can benefit from different regulatory treatments. For example the Victorian grain network with its low usage and significant task variability is very different from the Hunter Valley coal network. However, the variation in network characteristics does not justify the number of regulators and regulatory regimes currently in operation in Australia.

The rail industry would certainly benefit from reduced regulatory complexity and an increase in regulatory consistency via integration of regulatory systems. PN has previously advocated the development of a "Surface Transport Regulator" should be established to regulate nationally significant transport chains, with clear specific policy direction, and dedicated resources. This body could operate as a Centre of Excellence for transport regulation.

5.2 Regulation to facilitate efficient investment

A consistent weakness across the multiple rail regulatory regimes is an inability to foster efficient investment decisions.

Pacific National largely operates in a separated environment, where the tracks and trains are controlled by different entities. In these structures there are significant loses due to separation in terms of co-ordination, information sharing and most importantly investment incentives. Often investments which may be optimal for the rail system or supply chain as a whole are not undertaken as the return to the track provider are is deemed insufficient. Efficient investment incentives are not assisted by the myriad of distortion affecting road and rail access pricing.

This is not an academic issue and there are significant investments at risk due to inappropriate regulation. For example, while there is some above and below rail consultation in intermodal operations, full cooperative planning is a long way off, and efficient, aligned investments have been difficult to achieve. In the last three years, PN's Intermodal Division has invested $220 million in rollingstock and terminals to cope with growth in demand, compared with $42 million invested by the ARTC, the track owner. This lack of alignment is creating an environment in which delays in new track investment are common. PN has plans to invest a further $650 million in new rollingstock and terminals over the next five years, but will find this hard to justify without greater certainty around below rail management and investment. The level of supply chain cooperation facing PN businesses varies markedly.

These issues are replicated in grain, where there is a major level of uncertainty surrounding grain haulage operations in both New South Wales and Victoria. Critical medium to long-term investments are required in rollingstock, track, port facilities and silo facilities, and yet no agreed strategic plan or coordinating mechanism exists to ensure these investments are complementary. In New South Wales, decisions on future investment in the track will be pivotal and help to pave the way for investment in other parts of the chain. PN's 48 Class locomotives, for example, came into service in the 1960s, and are in need of refitting or replacement. However, long-term uncertainty means this investment is on hold.

In practice, there are undoubted efficiency benefits when a single entity owns and controls all aspects of a logistics system. Australia boasts a number of examples of world's best practice efficient, integrated logistics operations. Two rail examples are the Pilbara (recognised as the most efficient railway in the world) and the Rio Tinto Hamersley iron ore chain. In these logistics systems, one company owns the mines, all components of the railway, the port and the product. The single decision maker has full knowledge of the system and there is no barrier or delay in addressing operational or investment issues.

Pacific National believes that a regulatory objective should be to replicate where possible the benefits of integration in a structurally separated environment. There is currently significant opportunity for improvement of the systems that govern new investment, maintenance decisions and operational cooperation between above and below rail. Despite informal commitments to consultation, separated track providers are hamstrung by regulatory and policy failings which prevent them from functioning as responsive, proactive service providers to their various supply chains.

Access regulation affecting PN's rail businesses has tended to be narrowly focused, and rarely takes account of the operation of the chain as a whole. To replicate the benefits of an integrated chain in a structurally separated environment, regulators need

a clear new policy directive to take a wider view of the system, and practical tools to directly encourage cooperative supply chain behaviour.

PN believes there are a number of improvements that can be made to rail's regulatory regimes;

- processes to encourage efficient and coordinated investments from above and below rail and where appropriate different parts of the chain
- modifications to competition policy and regulation regimes to enable regimes to operate over the whole supply chain instead of individual chain components; and
- options to facilitate long-term investment certainty. For example, PN is only able to secure short term access agreements (and associated short term certainty on price and paths agreements) in some jurisdictions, despite rollingstock investment horizons which are typically 20 years or more.

PN would be happy to work with the Commission on developing some detailed implementable regulatory instruments to meet these objectives.

6.0 Conclusion

The Productivity Commission review of road and rail infrastructure pricing represents a significant opportunity for Australia's transport decision-makers. As demonstrated by two case studies in this submission, rail has a basic cost advantage over road on many key transport corridors. This advantage is currently being masked by inconsistent and distorted pricing mechanisms, and efforts to achieve efficiency in the transport task are being further complicated by infrastructure legacy issues, confusion as to the correct cost allocations between passenger and freight users, and regulatory differences.

Achieving a more efficient land transport infrastructure in Australia capable of handling the projected growth in the freight task will be a complex task and will require removal of numerous institutional and political obstacles.

Pacific National believes that steps can be taken now to put modal choices on a more efficient footing, building on the work of the Australian Government in establishing AusLink. Optimal modal mix decisions based on comprehensive benefit-cost assessments of modal options on Australia's key transport corridors are the crucial ingredients missing from our current land transport planning framework. Specific corridor pricing and investment should be considered as part of the one integrated process.

Should the Productivity Commission consider that there is merit in developing this concept, additional detailed analysis would be required. We would be happy to work with the Commission in developing this further.