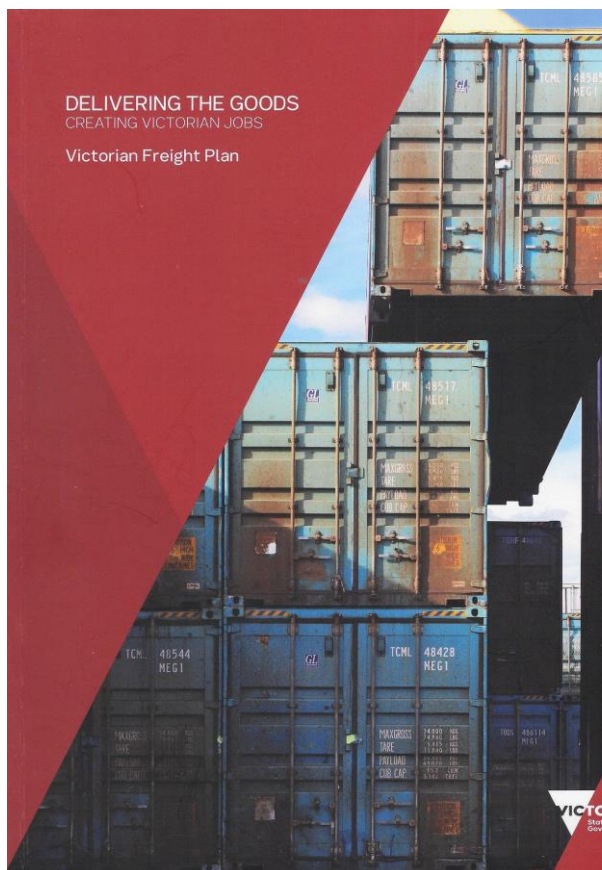


Rail Futures Institute Inc

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UPDATE OF THE VICTORIAN FREIGHT PLAN



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JUNE 2024

Rail Futures Institute is an independent non-partisan group. It was formed in 2013 to advocate in the public interest for cost-effective rail and intermodal solutions for public transport and freight problems based on sound commercial, economic and social reasoning. Rail Futures members include experienced rail professionals, urban planners, engineers and economists.

UPDATE OF THE VICTORIAN FREIGHT PLAN

OVERVIEW

In July 2018 Transport for Victoria released a Freight Plan – “Delivering the Goods; Creating Victorian Jobs; Victorian Freight Plan”.

The Plan projected a threefold increase in freight by 2050 and announced the creation of Freight Victoria (FV) as a separate entity within the Department of Transport to “*lead and drive the coordinated delivery of this plan*”¹. The Plan has a “*five-year program of priorities and actions including growing the share of freight moved by rail*”².

Six years on, we are pleased the Government has issued a Discussion Paper with the intent of updating the Plan and to set the forward trajectory for the role of Government in freight and logistics, especially in the context of climate change, the increasing freight task and supply chain disruptions.

Rail Futures Institute (RFI) is an independent non-partisan group formed in 2013 to advocate cost effective rail and intermodal solutions for public transport and freight problems based on sound commercial, economic and social reasoning. Although RFI is neither a freight operator nor freight customer, we have had a particular interest in the rail and intermodal parts of the Plan. Our membership includes people with long experience in freight and logistics, some with extensive senior management experience in the industry. We therefore consider our organisation well qualified to respond to this call for input to an updated Victorian Freight Plan.

As a general proposition, rail is ideal for transporting bulk commodities and containerised cargoes, especially between regional terminals and ports, even over shorter distances. Less than 20 freight trains, each of 50 wagons, can fill a 50,000 tonne grain ship compared with at least 1,000 trucks.

Rail freight will have a major role to play in achieving Victoria’s objective of net zero emissions by 2045. Getting more freight on rail will be vital in reducing the State’s carbon footprint. For comparable freight tasks, rail uses one-third of the diesel that trucks do per tonne of freight with one-third of the emissions. Increased use of rail freight as the freight task grows also has significant economic benefits, including reduced supply chain costs.

At RFI, our focus is on the future role of rail freight and intermodal development, discussed in the following sections of this submission:

- Network Planning and Infrastructure Capacity
- Service reliability
- Terminals, sidings and land use
- Supply chain resilience
- Gauge standardisation
- Rail harmonisation
- Bigger, heavier trucks and rail competitiveness
- Climate change, decarbonisation and energy efficiency
- Towards an updated 2024 Victorian Freight Plan

¹ “Ministerial Foreword, page 5, Victorian Freight Plan”, Transport for Victoria, July 2018

² “Delivering the goods – next steps, page 52, Ibid.

NETWORK PLANNING AND INFRASTRUCTURE CAPACITY

Selective investment in improved rail infrastructure is a key enabler of more efficient rail. Rail freight is generally contestable for many bulk commodities and much containerised freight (including some surprisingly short hauls), even when requiring a road pick up to the rail terminal. However, for rail to successfully compete for business which can also be satisfactorily handled by road, it needs to meet customer service requirements at a competitive price. For genuinely contestable freight, that can only occur when rail service is efficient and reliable. Rail's ability to deliver under these conditions largely depends on an appropriate mix of suitable rolling stock (operator responsibility) and fit for purpose infrastructure, much of the latter provided through capital funding from government. In this section we focus on infrastructure capacity as it relates to freight train operation.

A capacity problem exists for freight on the combined regional passenger and freight lines. Most of these lines have been re-configured and upgraded since the early 2000s to accommodate large increases in passenger service frequency but without consideration of capacity requirements for freight. The assumption is that any freight trains can use nocturnal train paths. We understand planning is underway to meet the Government's commitment for the Bendigo line to support for 20 minutes peak and 40 minutes off-peak frequency passenger services. However, this will effectively prevent operation of freight trains on the entire line except for a short period overnight. With modest additions to the project scope (additional intermediate crossovers on double track and passing lane sections), freight trains can also be accommodated when required at off-peak times. Additional line capacity can also be provided at low cost in many cases by consistent follow-on capability and better spacing and frequency of crossing locations or trafficable sidings.

Waurin Ponds to Warrnambool and North Bendigo to Echuca are two current examples of restricted capacity but with only modest enhancements to signalling and/or safeworking systems needed to enable efficient co-existence of passenger and freight services. The payback for providing higher capacity is a significant gain in passenger reliability and greater capacity for freight to cater for customer needs rather than operational availability dictated by the railway.

Another critical factor is the very limited freight train pathing availability in the MTM area, especially on the Gippsland line and to a lesser extent the Sunbury and Craigieburn lines. The case is a straight out lack of adequate infrastructure in these corridors. However, we are pleased to note the improved arrangements at Pakenham East which will provide added flexibility for both V/Line passenger and freight services. In the case of Sunbury, re-activation of the Echuca–Toolamba line would allow all freight from Deniliquin and the restored 'Barnes' grain storage site to divert to the North Eastern line where pathing over V/Line and MTM tracks is much easier. Only Swan Hill freight (grain from three or four sites on an irregular basis) would remain on the line via Sunbury.

Limited network capacity also exists on most grain lines. This requires further explanation. On such lines this is a function of the safeworking system. The existing Victorian Train Order system is cumbersome and inflexible compared to more efficient electronic systems in other parts of Australia. The inability to have more than one train at a time on some lines, particularly in the Mallee and Wimmera grain growing areas, is an unnecessary impost on rail's own performance. As has long applied in NSW and Queensland, an Electronic Train Order (ETO) system should be implemented on Victoria's freight-only rail network as soon as possible to improve the efficiency of train operations on those lines. The ETO system as used in NSW would be most suitable for use in Victoria.

SERVICE RELIABILITY

Another significant issue is that of extended 'track shutdowns' for major works. In most cases, extensive arrangements are made for alternative passenger services but impacts on freight customers are often overlooked – the multiplicity of shutdowns for level crossing removals are a case in point. The imposition of long shutdowns to suit project programs has become all too common with a resultant devastating impact on rail freight due to increased costs and loss of customer confidence in using rail. While passengers get a substitute bus during track disruptions, rail freight customers and rail freight operators receive no compensation and must incur the extra cost of using trucks and the holding cost of unused rail assets. These issues are causing serious commercial considerations for rail freight operators and their customers i.e. do they invest in Victoria or elsewhere where they can obtain a better return on their assets?

Frequent line closures for track works, signalling work, routine maintenance, Big Build projects and the like are the major cause of freight train cancellations (which equates to deliberately putting rail freight on road or sea). Big Build projects are claimed as improving reliability when those projects are the biggest single factor in the poor reliability of rail freight services. A number of freight hauls have been permanently lost to road by such closures (e.g. Deniliquin rice, Dandenong cement, some Long Island steel).

Wherever possible freight trains should be pathed through worksites under suitably degraded safeworking if necessary, and only completely cancelled where there is no alternative to the track being 'broken' (cutting in deviations ,new turnouts, etc.) and even then, only for a minimum time.

As a general comment, most issues and problems involving multiple organisations (such as the now fragmented railway industry) can be guided if not resolved with monetary signals. For example, RPV should be required to include a freight harm minimisation strategy in their project plans. An appropriate strategy would also price in the freight disruption cost to all major projects, thus providing monetary signals to encourage minimal disruption to freight services. Alternatively, they would be required to provide just financial compensation to the affected rail freight operators.

TERMINALS, SIDINGS AND LAND USE

Land use decisions are of critical importance in areas abutting or accessible to rail corridors, especially in Melbourne's outer west, north and south-east which are zoned for industrial use or freight and/or logistics purposes. Such areas are increasingly scarce and must be protected from incompatible development including residential development.

Opportunities regularly arise in such areas and elsewhere on the rail network for new sidings or connections from sidings to main lines to be provided as part of progressing new rail freight opportunities. The response to these enquiries from the responsible authorities and rail organisations is often slow and delayed further by a multiplicity of factors, including available funding for works on rail property. A timely response demonstrates serious intent to gain more freight to rail and a willingness to negotiate a 'win-win' outcome. A system that has predicated contingency funding for relatively low cost access to the rail system would materially assist in providing relatively rapid responses for progressing new rail freight business opportunities.

Other considerations are that:

- Properly conceived and executed rail-served industrial estates shorten the supply chain by largely removing an element of the overall task (terminal to/from warehouse).
- Where terminals (notably inland ports) are co located in urban areas it is important that rail freight has reasonable access to the relevant urban and inter-city passenger lines. The current contracted arrangements for metropolitan services make no allowance for this. Future arrangements should be specified so that the rail activity is treated in a holistic sense and not as a purely passenger service.
- There is a need for some buffer capacity to allow an efficient interface between line haul train paths (often subject to specific customer requirements at particular times) and terminals at ports or hub terminals which tend to operate 24/7.

SUPPLY CHAIN RESILIENCE

There is good evidence that rail can succeed even in markets where it is assumed to be non-viable (e.g. short haul). Success depends very strongly on customers understanding the driving issues that make rail attractive. A key attribute for market success is that rail freight service is both reliable and sustainable notwithstanding the vagaries of climate change. A closely related issue is the network's inherent reliability and resilience.

While the Victorian rail network (as a whole) is not as fragile as those in some other states there remain frequent impacts from infrastructure fragility. Events such as flood, fire, wind (fallen trees), high temperatures, copper wire theft and vandalism are relatively commonplace. There may be some gain from better husbandry of rail resources (e.g. vegetation control, protection of vulnerable low lying embankments in flood areas), while some alternative strategies may also be applicable (e.g. buried cables). One of the key strategies for rail resilience is the availability of alternative routes, few of which are currently available within regional Victoria.

Available routing alternatives to work around occupations or other disruptions or to improve overall operating efficiency should be provided wherever this can be done at modest cost. The two most obvious examples where this should occur are the re-instatement of cross-country lines from Toolamba to Echuca and from Eaglehawk to Inglewood. Both of these line sections are intact but not available for traffic. Both also have potential to generate new rail freight business.

Ultimately however, a genuinely resilient freight network needs all lines to utilise a common rail gauge.

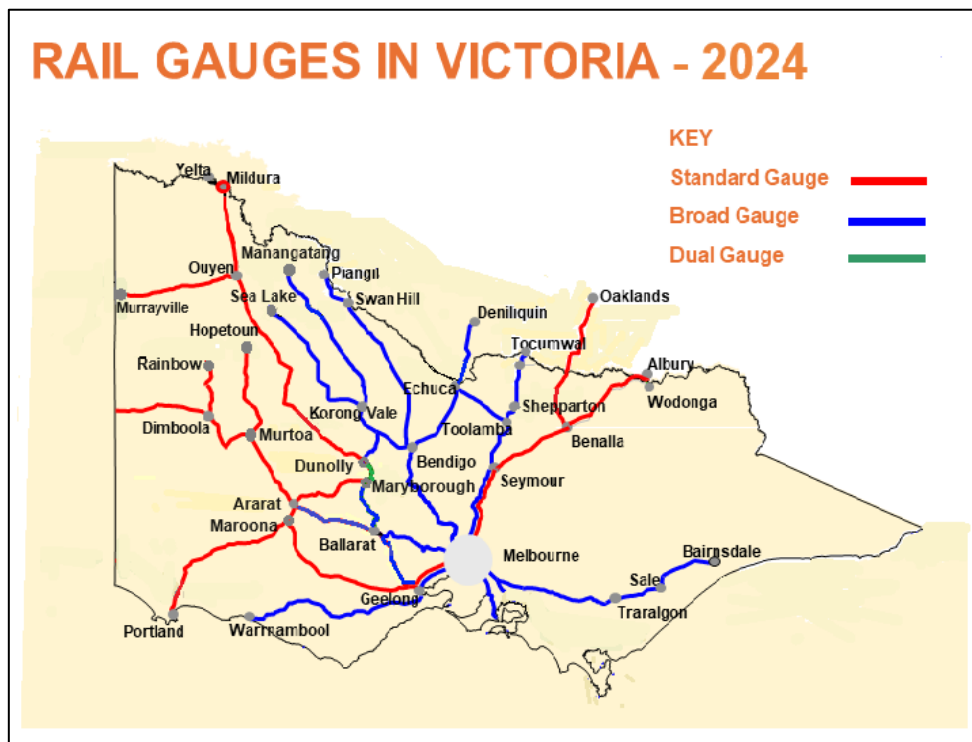
GAUGE STANDARDISATION

There is 1755 km of **freight only** lines in Victoria comprising 1077 km of active standard gauge, 678 km of active broad gauge, plus 302 km of out of service broad gauge track, the latter managed by VicTrack. Most of the active freight lines come under the management of V/Line as State Infrastructure Manager, along with 1246 km of **combined regional passenger and freight** lines and 220 km of **purely passenger** regional routes. The freight only network comprises 43% of the

State's regional rail network. All broad gauge freight trains also operate over regional passenger lines as part of their journeys.

In addition, interstate standard gauge passenger and freight lines and the Maroona – Portland line totalling 995km are under ARTC lease and control. The standard gauge interstate lines give access to the Australia-wide DIRN (Defined Interstate Rail Network). Producers with access to Victorian standard gauge lines are able to transport freight on rail to all mainland States. Fig. 1 below shows the extent of standard gauge and broad gauge lines at the present time (2024).

Figure 1 Victorian Rail Map showing 2024 extent of standard gauge and broad gauge lines



The Victorian situation is further complicated by not only having the only remaining regional broad gauge freight lines in the country, but that Victoria also now has all but two of the national breaks of gauge. Despite this, Victoria continues to ignore the opportunity to simplify resolution of the gauge problem by using long-life (i.e. other than timber) gauge convertible sleepers. For example, the present upgrade of the Shepparton line is using non-gauge convertible concrete sleepers that will all have to be replaced at great cost if the line is converted in future to standard gauge, as has often been discussed. This represents a serious financial and technical failure of rational future proofing on the part of DoTP and V/Line, the network lessee and incumbent infrastructure manager.

Gauge conversion in Victoria has proceeded sporadically since 1962 when the Albury – Melbourne standard gauge (SG) line was completed. The single break of gauge created in Victoria at that time was partially dealt with via a relatively efficient (for the period) bogie exchange facility in Melbourne (South Dynon). It was not until 1995 when the Melbourne – Adelaide line was converted to standard gauge (thus ending the practice of bogie exchange at major break of gauge locations) that the gauge fracture really started to become an issue within Victoria. This coincided with separation of the state's network into urban, regional and interstate components under the twin drivers of Competition Policy and Privatisation Ideology.

The State does not have a connected intrastate regional network but rather a dysfunctional mix of broad and standard gauge lines. Unlike the original state-based breaks of gauge, the impact is no longer end-to-end, but results from the creation of two independent but overlapping networks that are both sub-optimal as a consequence.

This mix of gauges within Victoria is seriously hampering sustainable rail freight efficiency. Rail freight, far more than passengers, is dependent on broad based regional economics than those dictated by state borders. Recent (2019/20) experience shows that large volumes of grain moved from Victoria to NSW (for drought relief) originated from those lines that are standard gauge, thus highlighting the benefits of having a nationally cohesive standard gauge freight network. Conversely, grain on the broad gauge network was restricted to traditional export and domestic markets and was unavailable to meet spot market or cross-border opportunities, in many cases resulting in lower returns to growers. Grain required from those lines for domestic use interstate was trucked due to the lack of direct interstate rail access.

The broad gauge locomotive fleet within Victoria comprises 22 locomotives owned by V/Line, some still used for passenger working, and 32 locomotives of varying types used by three rail freight operators. As broad gauge locomotives and wagons increasingly age (the newest broad gauge locomotives are already 20 years old and the oldest are 72 years old) they will become increasingly difficult to operate due to their condition and availability of spare parts.

Utilisation of the freight locomotives can be relatively inefficient at times since their number needs to be balanced against the demands of seasonal fluctuations in traffic e.g. with high demand for grain trains this year there can be difficulties managing the broad gauge locomotive fleet due to the competing demands of grain trains and scheduled services such as export container trains from regional terminals. This issue also highlights the lack of flexibility in resource use – broad gauge locomotives and wagons cannot be used in other states during times of low demand in Victoria whereas standard gauge equipment can be moved between systems as required.

Poor utilisation opportunities for both broad gauge locomotives and wagons inhibits renewal investment in these resources – such investment being directed to those activities with the greatest earning potential which are far more apparent on the national standard gauge network. This highlights the fact that the broad gauge freight network is operated by ageing locos (and wagons) which continue to be refurbished but are increasingly technologically dated. This is commercially and environmentally unsustainable. There is no incentive for rail freight operators to invest in new broad gauge locomotives (which are more expensive than standard gauge locomotives because of their specialised requirements) due to low financial returns and limited applications for their use.

The **Murray Basin Rail Project (MBRP)** was essentially a gauge standardisation project and is still only around half complete. The Ballarat-centred **Freight-Passenger Rail Separation Project (FPRSP)** was effectively part of the MBRP. The latter ceased to have relevance when the MBRP failed to reach Ballarat.

Failure to complete the MBRP to the original plan has resulted in less efficient rail service and an increase of freight on road due to increased costs and transit time for trains from the Merbein line having to travel an extra 129km via Ararat to get to the ports of Geelong or Melbourne – the exact opposite of the intent of the project.

RFI regards completion of the MBRP as a high priority, especially in relation to standard gauge access from south of Maryborough to Gheringhap via Ballarat. Arguments put from time to time regarding difficulty of standard gauge freight train access through Ballarat at non-peak times are considered invalid; several such movements already occur on broad gauge. With signalling and track design appropriate to today's traffic tasks, freight services on both gauges and V/Line passenger services can all operate more reliably than now.

A secondary priority is to standardise the freight only lines from Dunolly to Sea Lake and Manangatang via Inglewood and Korong Vale.

A priority for an updated Victorian Freight Plan should be to progressively rectify the gauge issue, with progressive implementation in an orderly way in as short a time as reasonably practicable. In 2001, this was recognised by the Bracks State Government which had the vision encapsulated as, *"The standardisation of Victoria's country rail network will end more than 120 years of Victoria's rail system being disconnected from the national rail network. It will create a seamless freight system linking Victoria's industries with national and global economies"*³.

A completed MBRP will achieve much of the Bracks' gauge standardisation plan. The remainder, involving gauge conversion of the lines from Ballarat to Ararat, Seymour to Tocumwal, Toolamba to Echuca and Echuca to Deniliquin are matters for the medium term.

HARMONISATION

Harmonisation of the various safety, accreditation, certification and rules based issues that remain as outliers of the former state based rail systems would remove substantial imposts on operating costs in terms of compliance resources. Anecdotally, even small operators and suppliers have found it necessary to provide dedicated resources to cover their compliance requirements out of all proportion to the size of their enterprise. While this is largely a national issue, Victoria has a voice at the table and should be using it to maximum effect.

BIGGER, HEAVIER TRUCKS AND RAIL COMPETITIVENESS

Bigger trucks may result in fewer trucks where there is no rail competition such as for many metropolitan freight tasks. However, where a rail freight alternative exists, such as in regional Victoria, bigger trucks tend to increase overall truck numbers because mode share is not fixed. Bigger trucks induce mode shift from rail unless rail freight can also adapt to transporting heavier loads and doing so more efficiently. As trucks get bigger their unit costs decrease making them more competitive with rail freight.

While rail linehaul is often cheaper than road transport, the additional pickup and delivery cost of transporting containers to and from rail terminals can make the total cost higher. Ongoing increases in permissible truck gross weight exacerbates this problem by further reducing truck unit costs to the extent that linehaul rates often become cheaper than rail, particularly over the shorter haul distances that apply in Victoria such as from Warrnambool and Tocumwal to the Port of Melbourne.

³ Peter Batchelor, Minister for Transport, State Budget 2001 media release, 15 May 2001.

The introduction of A-double and B-triple trucks onto Victorian and NSW roads has enabled trucks to also be more competitive with rail for the transport of grain, for example, over distances of 250-300km from port that were previously favourable to rail freight. A-double trucks are highly competitive with rail as they can transport two loaded forty-foot containers at a similar or cheaper rate than rail freight.

This occurred at a time when most jurisdictions had policies to increase freight on rail and specifically to increase the percentage of containers on rail to and from the Port of Melbourne and Sydney's Port Botany.

As observed by the Australian Competition and Consumer Commission (ACCC) in its container stevedoring monitoring report 2020–21, rail's share of containers at the Port of Melbourne was a paltry 6.1 per cent.

The ACCC Container stevedoring monitoring report 2021-22 notes that, apart from the Port of Fremantle, rail's share of containers to and from each of the other container ports has been falling. This, in part, has been due to approvals to use larger trucks.

The outcome is a significant increase in overall truck numbers resulting from a large mode shift away from rail for these medium length hauls. This may have been an unintended consequence however the result has been rapid deterioration in the condition of local and main roads and some highways in much of regional Victoria and parts of NSW, an increase in deaths from accidents involving heavy vehicles and overall increased diesel emissions.

These factors point toward the need for sustainable rail solutions that will significantly reduce emissions, reduce road damage and improve road safety while reducing line haul costs to users. This requires rail to operate within different metrics – principally increased axle loads, longer trains in most cases and faster turnarounds at terminals. In most cases, this requires infrastructure enhancement, allowing rail operations and systems to regain competitiveness with modern heavy road vehicles.

Minimal capital funding availability over many years for upgrading the freight-only lines has contributed to Victoria having technically and operationally conservative freight rail operating conditions. This has hampered productivity and competitiveness with road transport. Increased permissible axle loads and higher capacity rail wagons will deliver a major productivity gain because empty wagon tare weights do not increase proportionately with the gross weight of loaded wagons. For example, at permitted 19 TAL (typical of many Victorian lines), gross weight for a typical bogie wagon is limited to 76 tonnes comprising around 20 tonnes tare, hence 56 tonnes wagon contents. By contrast, where 23 TAL is permitted, larger wagons can load to 92 tonnes gross comprising around 22 tonnes tare and 70 tonnes contents – a considerable efficiency improvement with a 10% tare increase yielding 25% contents increase.

Apart from grain loading facilities on ARTC's main Melbourne-Adelaide line, there are no grain lines in Victoria that can accommodate 23 TAL, although some have been recently upgraded to 21 TAL. Upgrading to 23 TAL often requires heavier rail, also bridge strengthening in some cases to comply with strict engineering and safety standards.

Longer trains also reduce unit train operating costs in most cases. However, extended times for loading and discharge need to be offset by more efficient terminals. They also require longer sidings at terminals and extended crossing loops on single track main lines. The combination of these enhancements are the elements that rail needs to become highly competitive and reclaim traffic it previously handled.

In a competitive environment, wherever viable, private sector rail operators will always seek to maximise train operating efficiency through their own “above rail” investments in motive power and wagons. Some will also provide required terminal facilities. However, inadequate “below rail” infrastructure almost always sets limits on what rail can achieve and therefore its practical ability to compete with trucks.

Governments, state and Commonwealth, thus have a major role in influencing the extent of rail competitiveness through infrastructure ownership or long-term leases and, in most cases, direct operational control. Access charges imposed on rail operators already contribute significantly to infrastructure maintenance costs, arguably in greater measure than heavy road vehicle owners, particularly those covering long distances, currently contribute to their attributable road maintenance costs.

However, neither mode can fund major capital improvements as typified by major highway upgrades undertaken over many years. These generally involve a direct call on government funds, Commonwealth, state or combination thereof. Specific rail infrastructure improvement projects which demonstrate net economic benefits need new capital investment. Outcomes will be significant productivity gains, environmental sustainability and better customer service with resultant market share gain and reduced supply chain costs.

CLIMATE CHANGE, DECARBONISATION AND ENERGY EFFICIENCY

Climate change and the environment cover a range of issues that impact the community as a whole but are not necessarily reflected in the cost and revenue transactions directly involved in freight. Matters such as air pollution, emissions, road trauma, road congestion, fuel security and noise come into this category.

There was scant mention of environmental issues and the urgency of addressing them in the 2018 Plan, especially for reducing the carbon footprint, despite this being a key aim for the Government. Rectifying this omission in the 2024 Plan is too important to miss.

The arguments for the transition to greater fuel efficiency now, and ultimately of freight transport as a whole shifting from diesel fuel to a ‘green’ substitute (for example, hydrogen or hydrogen generated electricity), have been cogently made by Twiggy Forrest in an ABC program⁴ and by Alan Finkle in a recent Quarterly essay⁵. This paper argues that getting more trucks off the road (“more freight on rail”) is vital to reduce the State’s carbon footprint, but that the longer-term shift in the type of fuel used also needs recognition.

⁴ Forrest, A. (2021). 24 Jan 2021, Oil vs Water — Confessions of a carbon emitter. Australia, Australian Broadcasting Corporation, Radio National, https://www.youtube.com/watch?v=Gwfs3A_IXYc

⁵ Finkle, A. (2021). Getting to Zero - Australia’s Energy Transition. *The Quarterly*. Melbourne, Black Ink. QE81: 103pp.

The 2020 ARA (Australasian Railway Association) Value of Rail report summed up the environmental benefits of rail freight as follows:

- Safety benefits from reduced road accident costs - road accident costs are 20 times higher on road than rail for every tonne-kilometre of freight moved.
- Health benefits from reduced air pollution - rail freight generates 92% less PM10⁶ than road freight for each tonne-kilometre of freight moved.

The operation of heavy trucks on public roads is essential in a modern economy but comes with appreciable costs to the wider community. The New South Wales Independent Pricing and Regulatory Tribunal in its 2012 Review of Access Pricing discussed these costs for the NSW Rail Grain Network. These costs are noise, air pollution, emissions, road crashes and road congestion as well as an allowance for unrecovered road system costs from articulated trucks of one cent per net tonne-kilometre (c/tkm). Overall, for every 1% of the national freight task that moves to rail, there are benefits to society of around \$72 million a year. These external costs, although they do not appear in commercial transactions, are real costs affecting real people.

The higher costs for road freight in part reflect, that for comparable freight tasks, rail uses one-third of the diesel that trucks do per tonne of freight transported with one-third of the emissions, even despite the age of much of the Victorian locomotive fleet. Rail freight can play a major role in achieving Victoria's objective of net zero emissions by 2045.

On the national scene, reducing demand for diesel is a National Security issue. However, Victoria could start to fulfil its obligations to reduce Australia's carbon emission freight transport footprint. A commitment by the Victorian Government to transition from diesel to an eco-friendly power source would send a strong signal to the Victorian people, to Australians in general and particularly to the Australian Government. This would represent a tangible, real and significant community benefit in terms of clean air, amenity, road safety and social equity.

The challenge of transport decarbonisation in the context of climate change provides a critical case for more freight on rail and achievement of improved rail productivity, competitiveness and energy efficiency.

An effective response to climate change is a matter of concern for increasing numbers of Australians. In this regard, *'The annual Ipsos Climate Change Report 2022 shows the majority of Australians are concerned about climate change (83%) and 70% consider that Australia is already being affected by climate change, primarily with more frequent and extreme natural disaster events, which is a steady increase in concern and up from 56% in 2011.'* Ipsos, <https://www.ipsos.com/en-au/8-10-australians-are-concerned-about-climate-change>, 26 January 2023.

Responsibility for the environment has become a significant factor in the electoral behaviour of Australians. People are looking to governments for action. Governments are looking for options.

Such concern has been reflected in legislation passed in 2022 by the Australian Government to reduce emissions by 2030 to 43% of their 2005 levels, with net zero emissions by 2050. The Victorian

⁶ PM10 particles are a common air pollutant. PM10 particles are very small particles found in dust and smoke. They have a diameter of 10 micrometres (0.01 mm) or smaller.

Government has made even stronger commitments to net zero emissions by 2045 and that “By 2035, all sectors of Victoria’s economy will be on their way to net zero emissions.”

Transport, whose emissions in Australia have been trending upwards for some decades, is an essential target for change. However, this will require much more than the uptake of more electric vehicles. Pending efficiency fuel standards for cars and light commercial vehicles to be introduced shortly will also help to some extent.

In our 2017 submission to the consultation process preceding formation of a National Freight and Supply Chain Strategy (NFSCS), it was noted that “Rail freight is over three times more fuel efficient than road freight. Rail freight uses only 0.30 Megajoules of fuel for each tonne-kilometre of freight transported compared with 0.95 Megajoules of fuel used per tonne-kilometre by trucks.”

The Australian Government has also noted that rail freight uses one-third the fuel needed by road freight to do the same work with consequently much lower carbon emissions (Australian Government response to the Senate Rural and Regional Affairs and Transport References Committee report, *Management of the Inland Rail Project* by the Australian Rail Track Corporation and the Commonwealth Government, 2021).

Using less fuel also means less dependence on imported oil supplies.

The actual ratio for energy efficiency between rail and road depends on the freight task. To reduce emissions in land freight transport, there are two ways forward that will make a meaningful difference:

- A. Encourage road freight that is contestable by rail, back to rail; and
- B. Improve the energy efficiency of rail freight.

Our 2017 NFSCS submission also noted that “Transport contributed 18% of Australia’s greenhouse gas emissions in 2016. Transport emissions were 52% higher in 2016 than in 1990. Road transport causes 84% of all transport emissions (road freight 21%) compared with 3.5% for rail transport.

However, “Australia’s emissions projections 2022”, Department of Climate Change, Energy, the Environment and Water, Canberra, notes that, despite the impacts of COVID, transport contributed 19% of Australia’s greenhouse gas emissions in 2020. As noted by the International Energy Agency, *CO2 Emissions from Fuel Combustion 2009*, p69, Australia’s greenhouse gas emissions from transport are the eighth highest in the world because of the nation’s high use of road transport.

It is of note that the 2022 [International Energy Efficiency Scorecard](#) prepared by the American Council for an Energy-Efficient Economy shows how far Australia has fallen behind. Although Australia ranked 18th out of 25 of the world’s largest energy users overall, it had a damning rating of just 23rd for transport.

On five of the nine criteria for assessing transport, Australia scored zero points. These were:

- no fuel economy standards (soon to be rectified for cars and light commercial vehicles);
- poor on light vehicle average fuel economy;
- low share of electric vehicle sales;
- no heavy vehicle fuel economy standard; and
- no smart freight programs.

Indeed, without the very high energy efficiency of the Pilbara iron ore rail operations and the massive freight task they perform, Australia would have rated even more poorly. A smart freight program will encompass the benefits of efficient rail.

With a sustained investment in upgrading roads and relaxation of truck mass and dimension limits and other factors, the road freight industry has been able to increase its productivity and efficiency, and for some freight tasks, to reduce its emissions. However, to date, no fuel efficiency standards have been proposed for vehicles with a gross mass exceeding 3.5 tonnes.

It is of concern that BITRE in its Australian aggregate freight forecasts – 2022 update (Summary), includes a projection that road freight is expected to grow by some 77 per cent from 2020 to 2050, whilst rail freight is expected to grow by just 6 per cent over the same period. This has serious implications, not only for increasing transport emissions, but also road congestion, road damage and road safety.

Rail freight is generally contestable for many bulk commodities and much containerised freight (including some surprisingly short hauls), even when requiring a road pick up to the rail terminal or loading point. However, for rail to successfully compete for business which can also be satisfactorily handled by road, it needs to meet customer service requirements at a competitive price. For genuinely contestable freight, that can only occur when the service offered by rail is efficient and reliable.

Rail's ability to deliver under these conditions largely depends on an appropriate mix of suitable rolling stock (operator responsibility) and fit for purpose infrastructure, much of the latter provided through capital funding from government. In recent years, a range of rail operators have been investing in new and much more fuel efficient locomotives, albeit only on standard gauge.

TOWARD AN UPDATED 2024 VICTORIAN FREIGHT PLAN

The 2021/22 State Budget (Thursday 20th May 2021) contained the statement, *“Rail freight will continue to play a key role in reducing congestion and environmental impact for the movement of goods. With Victorian freight volumes expected to more than double by 2051, the Labor Government will continue supporting the growth of rail freight to get trucks off local roads”*. These were admirable sentiments but more action is needed if they are to be achieved – completion of the Murray Basin Rail Project and further track upgrading on freight-only lines are two such examples. An action-oriented update of the 2018 Plan should sharpen the focus and push for real progress.

Some key factors which the updated plan should address include:

- a vision articulated for the freight rail infrastructure of the future – gauge standardisation, increased axle loads, line speeds aligned to efficient train operations and adequate corridor capacity;
- clear responsibility for ensuring that incremental infrastructure upgrading retains relevance in the context of a nationally competitive freight business.
- clear responsibility for ensuring that the rail freight infrastructure (including that leased by ARTC) is maintained to its intended standard;

- responsibility for ensuring that the rail freight infrastructure has performance-based standards established with reference to the commercial freight world;
- emphasis on the operational and engineering subtleties between the freight and passenger network and their combined traffic requirements;
- resources (including funding) required for the Regional Freight Network to progress incremental improvements for remaining competitive as technology and productivity advance.

Words such as *upgrade*, *duplication*, *strengthening*, *alternative route* appear frequently in the 2018 Plan. However, these words appeared almost exclusively in association with road projects. There was no such language in relation to rail. The contrast was stark - on one hand incremental improvements were encouraged on the road network with no reference to competitive factors or community *best value* while rail projects of real economic and community value – such as the full Murray Basin Rail Project – have been allowed to stagnate.

Failure to act to get more freight on rail has simply been a recipe for more loads on roads with adverse road safety impacts, higher road maintenance costs, increased air pollution and higher emissions.

All of these factors need to be addressed in a new Victorian Freight Plan which specifically provides for a substantial increase in the share of freight moved by rail. It should provide a framework for determining minimum standards for freight network track (the assumption being that the passenger network over which freight is operated will always be of relatively high standard). Such matters as axle loading, freight train speeds, lengths of trains, passing lanes/crossing loops and provision of loading/unloading sidings for prospective rail freight traffic are all relevant matters for the Plan and should be addressed with reference to operational and commercial needs as well as engineering realities.

In short, maintenance and growth of rail freight in Victoria needs planning, resources and experienced management which is dedicated to these objectives and has sufficient influence to prevent rail freight from being dismissed as the not-very-important part of a passenger dominated rail network.

Does Freight Victoria, as presently resourced, have the capacity to achieve these outcomes?

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