

Department of Education, Employment and Workplace Relations

Road Safety Remuneration System: Regulatory Impact Statement

November 2011

DEEWR

*Regulatory Impact
Statement*

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Abbreviations

Abbreviation	Description
ABS	Australian Bureau of Statistics
ACTU	Australian Council of Trade Union
ALTA	Australia Livestock Transporters Association
ATSB	Australian Transport Safety Bureau
BITRE	Bureau of Infrastructure, Transport and Regional Economics
CBA	Cost Benefit Analysis
CoR	Chain of responsibility
DEEWR, the Department	Department of Education, Employment and Workplace Relations
DoIT	Department of Infrastructure and Transport
GDP	Gross Domestic Product
GVM	Gross Vehicle Mass
HC	Human Capital
HV	Heavy Vehicle
ITLS	Institute of Transport and Logistics Studies
NPV	Net Present Value
NRTC	National Road Transport Commission
NTC	National Transport Commission
NTI	National Transport Insurance
OBPR	Office of Best Practice Regulation
OHS	Occupational Health and Safety
PwC	PricewaterhouseCoopers
RIS	Regulation Impact Statements
the Directions Paper	Safe Rates, Safe Roads Directions Paper
the IC Act	the Independent Contractors Act 2006
the NTC Report	Safe Payments: Addressing the underlying causes of unsafe practices in the road transport industry
tkm	Tonne-kilometre
TWUA	Transport Workers' Union of Australia
VoSL	Value of Statistical Life
VoSI	Value of Serious Injury
WTP	Willingness to pay

Executive summary

Overview

PricewaterhouseCoopers (PwC) was engaged by the Department of Education, Employment and Workplace Relations (DEEWR) to prepare a Regulation Impact Statement (RIS), including a Cost Benefit Analysis (CBA), for establishing a Road Safety Remuneration Tribunal (tribunal) for employee and owner drivers in the road transport industry. The tribunal's approach to setting pay and/or pay related conditions would be research focused and evidence based. The tribunal would have discretion to set rates of pay and/or pay related conditions for drivers operating in sectors of the road transport industry, where necessary to improve safety outcomes.

The tribunal would also have discretion not to set a rate or remuneration related conditions. The tribunal may also decide to only set remuneration related conditions, which may place an obligation on hirers, employers and the supply chain to pay for any waiting, loading or unloading time, for example. The obligation may also require owner drivers to be paid within a set time period, such as 14 or 30 days. The tribunal would also have a range of other functions, including dispute resolution.

When performing its functions, the tribunal would be required to take into account a range of criteria, including the likely impact on business; the special circumstances of areas that are particularly reliant on the road transport industry; and the likely impact on the national economy and the effect on the movement of freight across the nation.

The options considered in this RIS relate to the Government's response to the 2008 National Transport Commission Report, *Safe Payments: Addressing the underlying causes of unsafe practices in the road transport industry* (the NTC Report).¹

The problem

Truck driving is the occupation/industry with the highest incidence of fatal injuries. When a truck is involved in a safety incident, the general public is also affected. If directly involved, then statistically it is likely that the other party will suffer worse consequences than the truck driver. There are also costs associated with the impact of shared infrastructure and monetised and non-monetised community costs.

According to the Department of Infrastructure and Transport, in the 12 months to December 2010, 232 people were killed in 197 accidents involving heavy trucks. There were 25 deaths per 100,000 workers in the industry in 2008-09 which is ten times the average for all industries.

While transport safety outcomes have improved over the years, there are still an unacceptably high number of truck accidents. The concern is that without further action, the number of accidents will remain high.

Speed and fatigue are often identified as the primary cause for a crash but it is a much harder task to prove that drivers were speeding because of the manner or quantum of their remuneration. There is some research to suggest that the remuneration for drivers is a factor in safety outcomes, however data at this point in time is limited and being definitive around the causal link between rates and safety is difficult. International research has found a correlation between remuneration and safety performance, particularly where very low levels of remuneration are concerned (Rodriguez *et al* 2006, Nafuko *et al* 2007 and Belzer *et al* 2002). An Australian study found that drivers paid by a 'payment-by-results'

¹ <http://www.ntc.gov.au/filemedia/Reports/SafePaymentsFinalReportNov08.pdf>

method were twice as likely to report being fatigued on at least half of their trips than drivers paid an hourly rate (Williamson et al 2001).

The NTC report found that market failures and payment rates and methods in the road transport industry create an incentive for, or encourage, unsafe driving behaviours that contribute to poor safety outcomes on the roads.

Moreover, stakeholder feedback has highlighted likely market failures that are leading to concerns with existing remuneration levels for employee and owner drivers in some sectors of the industry. The market failures relate to the low market power of owner drivers, behavioural issues around individual decision making, and the significant barriers to exit from the industry. Remuneration rates for Australian owner drivers appear to be low. According to analysis of 2006 Census data, almost 30 per cent of owner-drivers are paid less than an assumed 'notional award' remuneration.

Objectives

The objective of the proposed options is to improve safety performance in the road transport industry, to reduce the number of deaths and injuries for both truck drivers and the general public. The aim of Government action is to put in place measures which can result in a reduction of the financial incentives for employee and owner drivers to drive in ways that increase the risk of death and injuries on the road. Improving equity for owner drivers, in terms of income distribution, has also been acknowledged as a major driver of related state government legislative action in recent years.

The options

This RIS examines potential impacts associated with three options:

1. maintaining the existing federal and state-based legislation for employee drivers and owner drivers (where applicable) - this option is the base case for this RIS
2. introducing a voluntary system of payments for owner drivers and chain of responsibility arrangements
3. establishing the tribunal, with discretion to set and maintain remuneration rates and/or remuneration related conditions for employees, owner drivers and the supply chain, if safety outcomes would improve as a result of the decision.

Impact analysis

The economic framework in this RIS responds directly to answering the key economic question, namely:

'will the societal benefits from improved road safety offset the expected increase in the resource cost and productivity of freight and cost to government from establishing and implementing a road safety remuneration system for owner and employee drivers?'

Australia's freight task is forecast to continue growing. Heavy vehicles account for the largest proportion of the road freight task in Australia. According to the Bureau of Infrastructure, Transport and Regional Economics (BITRE), in 2007–2008 road transport accounted for approximately 1.7 per cent (\$17,988 million) of Australia's total gross domestic product (GDP) (\$1,037,027 million) and approximately 2.3 per cent (246,100) of total Australian employment (10,673,400).

There are approximately 231,900 truck drivers in the road transport industry, including an estimated 71,000 owner drivers. The industry has an ageing workforce in comparison with other employment sectors, with more than 40 per cent of workers aged 45 years and over.

Critically, the options set out above do not prescribe a specific remuneration level or structure for owner drivers and employees. Therefore, rather than seeking to estimate the net economic benefit of specific pay rates for a specific road transport segment, the economic impacts of the options are

assessed in terms of three road transport scenarios, which provide a representative cross-section of the road transport industry.

For the purpose of this RIS, the impact analysis has focussed on the following sectors or scenarios:

- long haul road freight - half of the road freight in Australia (tonne kilometre) is classified as 'long distance' freight, with an average trip length of 300-500 kilometres. This segment of the market is expected to account for 60 per cent of road freight by 2030. As such, most of the interstate and part of the intra-state freight task falls within this category.
- short haul quarried - the quarrying industry in Australia is expected to generate revenue of about \$9 billion in 2010/11². Road is the primary mode for moving product between rock quarries, sand and gravel extraction sites, cement production and distribution facilities and concrete batching plants throughout the nation.
- short haul agriculture - this is generally short haulage transport where most of the origins and destinations are located within the same region. This sector accounts for approximately 15 per cent of total road freight volume. The agricultural sector accounts for approximately 50 per cent of heavy vehicles but contributed only 15 per cent of total network tonne volumes.

The direct costs and benefits were identified and monetised for Options 2 and 3 using the three above sectors. The potential second round market responses from the introduction of Options 2 or 3 have not been modelled because of data limitations, in particular a lack of information about supply and demand for owner driver services and uncertainty about the actual number of owner drivers and amount of the freight task they carry. The impacts of potential second round market responses are discussed qualitatively instead.

The CBA focuses on quantifying the direct material impacts of the options, based on an assumption that current wages are efficient. However, there is evidence to suggest that existing owner driver remuneration may not be efficient because of an unpriced safety externality and other market failures facing owner drivers. It is important to note that the scenario modelling results are purely illustrative and are highly sensitive to the assumptions adopted.

In Option 2, owner drivers covered by the legislation may benefit from increased remuneration and reductions in accidents. The community may also benefit from a reduction in accidents but may have to pay a share of the costs of remuneration increases for owner drivers.

Under Option 3, if a tribunal chose to set a mandatory rate of remuneration for drivers in the road transport industry, or a particular segment of it, the magnitude of direct costs and benefits arising from this decision would depend on the coverage of the legislation establishing the tribunal and the compliance rate of owner drivers and supply chain businesses with that rate. The scenarios model a range of coverage and compliance rates, to demonstrate the range of potential impacts of any decisions made by the tribunal.

The CBA results presented in the table below indicate that the costs outweigh the benefits for both Option 2 (voluntary system) and Option 3 (mandatory system).

² IBIS World 2011, *Concrete slurry manufacturing in Australia, Industry Report C2633; Concrete and line manufacturing in Australia, Industry report C2631; and Gravel and sand quarrying in Australia, Industry report B1411*

CBA model results - Central estimates over 10-year period

	Option 2 – voluntary 10% compliance rate		Option 3 – 60% coverage and 90% compliance rates	
	BCR	NPV	BCR	NPV
Overall sector	0.49	-\$44.4m	0.51	-\$228.4m

The costs are significantly due to higher remuneration rates, especially for Option 3, which are likely to be passed on in the supply chain and ultimately paid for by consumers. The benefits are derived from improved safety (less road fatalities and injuries) for owner-drivers and other road users and less property damage. The implementation costs for Options 2 and 3 are minor.

Scenario modelling (refer to Appendix E) shows that changes in coverage and compliance rates can result in a significant increase in the BCR to that shown above, while changing the assumption on existing remuneration being efficient can result in benefits without any economic cost. This suggests the achievable outcome may be better than the results above, particularly if current remuneration is inefficient and increases in remuneration move it towards an efficient level. The absence of definitive evidence regarding the efficient wage means that, as previously noted, scenario models are highly sensitive to the assumptions adopted. As such, it is arguable as to whether or not the results observed in Appendix E would be achieved.

Conclusion

This RIS adopts a wide range of assumptions in the face of incomplete and uncertain data. While the CBA results indicate that the costs outweigh the benefits with both Options 2 and 3, the results are sensitive to the assumptions used. Changing the central assumption that existing remuneration is economically 'efficient' would have a significant impact on results for both Options 2 and 3.

There are valid economic grounds for establishing a tribunal, which is expected to cost about \$5 million per annum. The tribunal's approach to setting pay and pay related conditions would be research focused and evidence based. The tribunal would have discretion to set rates of pay and/or pay related conditions for drivers operating in sectors of the road transport industry, if there was evidence these rates and/or conditions would improve safety outcomes. For example, the tribunal may consider to only set remuneration related conditions, such as an obligation on hirers, employers and the supply chain to pay owner-drivers for any waiting, loading or unloading time. Under Option 3, mandatory payment to owner drivers for every one hour of waiting time could, in a best case scenario, result in an economic transfer to owner drivers, with possible efficiency gains, of up to \$155 million.

Option 3 is preferred over Option 2 because establishing a tribunal with the discretion to set rates of pay and/or pay related conditions for drivers operating in sectors of the road transport industry, where necessary to improve safety outcomes, can more effectively address current unacceptable levels of safety and potential market failures.

1 About this Regulation Impact Statement

1.1 Background

PricewaterhouseCoopers (PwC) was engaged by the Department of Education, Employment and Workplace Relations (DEEWR) to prepare a Regulation Impact Statement (RIS), including a Cost Benefit Analysis (CBA), for establishing a Road Safety Remuneration Tribunal (tribunal) for employee and owner drivers in the road transport industry. The tribunal's approach to setting pay and/or pay related conditions would be research focused and evidence based. The tribunal would have discretion to set rates of pay and/or pay related conditions for drivers operating in sectors of the road transport industry, where necessary to improve safety outcomes.

This RIS substantially draws on previous work commissioned by the National Transport Commission and two subsequent reports produced by DEEWR which involve: an economic analysis of the concept of safe payment rates and a preliminary, high level RIS developed by DEEWR in 2011.

The analysis in the RIS builds on the existing data, collating and combining the available and, where possible, updated information.

1.2 Purpose of this Regulation Impact Statement

The options considered in this Regulatory Impact Statement are proposed in the context of formulating the Government's response to the 2008 National Transport Commission Report, *Safe Payments: Addressing the underlying causes of unsafe practices in the road transport industry* (the NTC Report).³

The NTC report presents the findings of the research which the NTC commissioned through Professor Michael Quinlan and the Hon Lance Wright QC. The NTC report concludes that, on balance, there is strong link between remuneration levels and safety performance. While Quinlan and Wright recommended a number of options to address this issue, ultimately the NTC report endorsed an option which involves a national scheme for setting mandatory safe rates covering both employee and owner/drivers be established in the heavy vehicle industry. This is put forward as being the only viable and direct mechanism for addressing the imbalance in bargaining power confronting owner/drivers that ultimately impacts on-road behaviour and safety in the road freight industry.

In response to the NTC Report, in November 2010, DEEWR published the *Safe Rates, Safe Roads Directions Paper* (the Directions Paper),⁴ which sets out a number of specific models by which the recommendation of the NTC report could be implemented. Specifically, the Directions Paper calls for feedback on the models canvassed which include the following:

- a new specialist tribunal with power to make orders regarding safe rates and related terms in the road transport industry (Specialist Tribunal)
- a safe rates panel within Fair Work Australia with power to make orders regarding safe rates and related terms in the road transport industry (Safe Rates panel)
- extending the Fair Work Act 2009 to owner drivers, with Fair Work Australia empowered to make orders regarding safe rates and related terms in the road transport industry (Outworker Model).

³ <http://www.ntc.gov.au/filemedia/Reports/SafePaymentsFinalReportNov08.pdf>

⁴ <http://www.deewr.gov.au/WorkplaceRelations/Policies/SafeRatesSafeRoads/Pages/default.aspx>

Following analysis of the submissions and the preliminary economic analysis, the tribunal model has been further developed. The proposal now sets out a “two-step” process to determining remuneration rates. The tribunal would firstly gather and analyse additional evidence to assess the impact that existing remuneration and remuneration related conditions have on safety outcomes within particular sectors of the road transport industry. Based on these assessments the tribunal would then consider whether to set appropriate remuneration rates and/or remuneration conditions for that sector of the industry.

This RIS examines the potential impacts associated with three options:

1. maintaining the existing federal and state-based legislation for employee drivers and owner drivers (where applicable) - this option is the base case for this RIS
2. introducing a voluntary system of payments for owner drivers and chain of responsibility arrangements
3. establishing the tribunal, with discretion to set and maintain remuneration rates and/or remuneration related conditions for employees, owner drivers and the supply chain, if safety outcomes would improve as a result of the decision.

It is important to note that the scenario modelling for both Options 2 and 3 is based on limited and incomplete data. Therefore, in Option 3 for example, it would be up to the tribunal to decide on the appropriate remuneration rates and/or remuneration related conditions if and where appropriate. The CBA is therefore necessarily illustrative and highly sensitive to the assumptions adopted.

1.3 RIS Structure

The RIS sets out:

- background and context to the industry
- the regulatory problem, to the extent data allows
- the objectives for any regulatory intervention, which is linked back to reducing or addressing the problem
- the options and advantages and disadvantages for those options
- the impacts for each option as well as three scenarios under a mandatory tribunal model
- a summary of the findings from the impact/scenario analysis.

2 Background

The following is a high-level overview of key data and policies so as to put into context the issues relating to rates of pay and/or pay related conditions and safety outcomes in the road transport industry. In this regard there have been a number of developments in recent years around safety and the current regulatory arrangements, particularly as they relate to owner drivers, the nature of the freight task and the key road transport vehicle categories and sectors.

2.1 General policy context

In the 12 months to December 2010, 232 people were killed in 197 accidents involving heavy trucks. These crashes are estimated to cost around \$2 billion a year out of the total \$15 billion costs of road crashes (i.e. just over 13 per cent of total costs). The numbers of crashes resulting in a hospitalisation involving a heavy truck are about three times those involving a fatality.⁵

Other data shows that while there were improvements in the early to mid 1990s where fatalities resulting from heavy vehicles fell substantially, the numbers of fatalities have remained relatively static since 1996. Since then the freight task has increased substantially, as have the registrations of articulated vehicles. From 2000 to 2004, one in every five road deaths involved heavy vehicles, with speed and fatigue widely acknowledged as significant factors.⁶

Governments have been concerned about the number of overall road incidents and have implemented a number of reforms. These reforms include those relating to seat belts, breath testing and initiatives to target speeding. There have also been some reforms that are directed specifically at the drivers of heavy vehicles such as fatigue management, disclosure requirements and educational initiatives. So far, none of these have dealt at a national level with the issue of owner driver remuneration and how that remuneration relates to safety outcomes.

2.1.1 National Transport Commission Report

The National Transport Policy Framework comprises the reform agenda for Australia's transport system. As part of this reform agenda, the Australian Transport Council (ATC) requested that the National Transport Commission (NTC) investigate the underlying causes of un-safe practices in the heavy vehicle transport sector.

In 2008, federal, state and territory transport ministers specifically requested that the NTC provide report to the ATC on safe payments. Specifically, the NTC was tasked with:

“... identifying and assessing options for implementing a system of safe rates for both employees and owner-drivers, recognising the special vulnerabilities of independent contractors in the transport industry.”

In response to these requests, the NTC undertook the Safe Payments Project. The aim of the project was to develop recommendations on:

- whether there is a payments/safety link

⁵ National Transport Commission 2008, *Safe Payments – Addressing the Underlying Causes of Unsafe Practices in the Road Transport Industry*, National Transport Commission, October 2008, p.5.

⁶ National Transport Commission 2008, *Safe Payments – Addressing the Underlying Causes of Unsafe Practices in the Road Transport Industry*, National Transport Commission, October 2008, p.6-7.

Background

- whether there is a safety case for regulatory intervention into ‘safe payments’
- options for regulatory reform.

The NTC finalised its Report (Safe Payments: Addressing the Underlying Causes of Unsafe Practices in the Road Transport Industry) in October 2008. Based on the commissioned research presented, the Report found that there was a link between driver remuneration and poor safety outcomes in the heavy vehicle industry.⁷

The NTC developed the following four options for a regulatory response for addressing the safety/payments link along the spectrum as follows:

1. status quo—no new legislative reforms but implementation of existing NTC reforms
2. state-based regulatory system—current regulatory system and the implementation of owner driver legislation in those jurisdictions that do not currently have it. No new Commonwealth regulation
3. national framework for employee and owner drivers—the establishment of a specialised body under Australian Government transport legislation
4. national industrial relations scheme for all drivers—creation of a new chapter in the Workplace Relations Act to establish and maintain safe payments for owner drivers and employees.

Option 3 was the NTC’s preferred option as this was regarded as the optimal model for addressing the link between payments and safety outcomes.

Specifically, Option 3 recommended the establishment of a specialised body under federal transport legislation to:

- establish and maintain enforceable safe payments for employees
- establish and maintain enforceable safe payments for owner drivers
- settle disputes in a low-cost, accessible manner
- consider and, if necessary, bestow rights and impose obligations regarding safe payments on other parties in the transport supply chain, and
- consider and, if necessary, bestow rights and impose obligations with respect to enforcement of safe payments.

The NTC Report recommended that the Australian Transport Council (ATC):

1. recognise that payment rates and methods create an incentive for, or encourage unsafe on-road behaviours such as speeding, fatigue and use of illicit substances which contribute to poor safety outcomes in the trucking industry;
2. acknowledge that this link should be addressed through regulatory intervention;

⁷ National Transport Commission 2008, *Safe Payments – Addressing the Underlying Causes of Unsafe Practices in the Road Transport Industry*, National Transport Commission, October 2008, p.19.

3. recognise that safe payments for truck drivers requires a whole of government approach due to linkages with transport law, workplace relations law and independent contractors/small business law;
4. endorse the policy proposal in Option 3; and
5. request the federal Minister for Infrastructure, Transport, Regional Development and Local Government to progress the issue in consultation with his Commonwealth Ministerial colleagues and report back to the ATC in May 2009.

In November 2008, the ATC considered the NTC Report and advice about a national framework for setting and maintaining safe payments systems in the road transport industry, including safe rates for owner drivers and employees. The potential flow-on effects from payment rates and methods to unsafe on road behaviours and poor safety outcomes in the trucking industry were noted. At that time, Ministers represented on the ATC agreed that there was a case for investigating a whole of government regulatory approach to address this issue.

2.1.2 Safe Rates, Safe Roads Directions Paper

As part of its response to the NTC Report, the Australian Government asked the Department of Education, Employment and Workplace Relations (the Department) to consult with industry stakeholders and develop models for possible reform in the industry. Following consultation with the Safe Rates Advisory Group, the Department subsequently released the *Safe Rates, Safe Roads* Direction Paper, which sets out models for implementing the preferred NTC option, with the aim of addressing safety throughout the industry by developing legislative and other strategies to put in place pay rates and methods that result in safer work practices in the transport industry.⁸

As set out above, the three models of tribunal outlined in the Directions Paper included:

- A New Specialist Tribunal
- A Safe Rates Panel within Fair Work Australia
- Extending the Fair Work Act 2009 to owner drivers.

The Department received submissions from 45 parties in response to the Directions Paper

2.2 Specific policy context

2.2.1 Background to the sector

Freight task and rates

Heavy vehicles account for the largest proportion of the road freight task in Australia. The road transport industry is an important part of the Australian economy. According to the Bureau of Infrastructure, Transport and Regional Economics (BITRE), in 2007–2008 road transport accounted for approximately 1.7 per cent (\$17,988 million) of Australia's total gross domestic product (GDP) (\$1,037,027 million) and approximately 2.3 per cent (246,100) of total Australian employment (10,673,400). Australia's freight task has increased at an annual growth rate of 5.6 per cent per annum

⁸ <http://www.deewr.gov.au/WorkplaceRelations/Policies/SafeRatesSafeRoads/Pages/default.aspx>

from 27.1 billion tonne-kilometres (tkm) in 1972 to 182.5 billion tkm in 2007 and this growth is forecast to continue.⁹

In contrast, over the last 30 years road freight rates have been steadily declining in real terms. Crucial to transport being able to meet the growing freight task is further improvements in efficiency, productivity and safety outcomes in the road transport industry. The BITRE *Freight Rates in Australia, 1964–65 to 2007–2008* report suggests that between 1980–1981 and 2000–2001 real road freight rates declined by 22 per cent, relative to average consumer prices. In more recent times though, over the seven years since 2000–2001, real road freight rates have actually increased by 9 per cent.

Current regulatory arrangements

Owner drivers and employees

There are approximately 231,900 truck drivers on Australian roads who can be classified by their employment status as employee-drivers or owner-drivers.¹⁰ The estimated numbers of owner drivers in Australia is approximately 71,000. These figures are broadly in line with the industry estimates that around 30 per cent of drivers are owner-drivers¹¹.

The industry has an ageing workforce in comparison with other employment sectors, with more than 40 per cent of workers aged 45 years and over¹². According to the National Truck Accident Research Centre, in 2009, drivers aged 45 years and above were involved in proportionally more accidents than younger drivers¹³.

A range of legislative arrangements apply to owner drivers. These arrangements cover regulation of safety in the road transport industry and regulation of owner driver contracts and remuneration through commercial law or applicable state-based owner driver legislation.

Owner drivers are regulated by Commonwealth and state and territory legislation. This legislation includes general commercial law and specific owner driver legislation. Existing regulation at the federal level for owner drivers subject to Commonwealth laws includes the Competition and Consumer Act 2010 and the Independent Contractors Act 2006 (IC Act). Exemptions from the IC Act have been granted to New South Wales (NSW), Victoria and Western Australia (WA), as they have specific legislation that deals with owner drivers and their ability to make contracts.

As owner drivers are independent contractors, they are subject to commercial and not workplace relations laws. To the extent that it is constitutionally possible, the IC Act overrides state and territory laws that require independent contractors to be treated as employees or provide employment-like entitlements, unless a specific exemption has been granted.

Unlike employees, who are afforded a safety net under workplace relations laws, owner drivers have access to the Federal Court or the Federal Magistrates Court to review contracts, and to vary, or set aside the contract if it is found to be unfair or harsh. In deciding whether a contract is unfair or harsh, under the IC Act, the Court may consider the following:

- whether the total remuneration paid to the independent contractor is less than an employee doing the same work would have received

⁹ BITRE Research Report 121, p. xv.

¹⁰ Unpublished ABS data, 2009.

¹¹ BITRE 2003, *Working paper 60: An overview of the Australian Road Freight Transport Industry*, Canberra.

¹² Australian Transport Council National Workforce Planning and Skills Strategic Plan, October 2009 (see http://www.atcouncil.gov.au/documents/files/Workforce_Planning_and_Skills_Strategic%20Action_Plan-November_2009.pdf).

¹³ National Truck Accident Research Centre 2011, *Major Accident Investigation Report*, Brisbane

Background

- the terms of the contract when it was made
- the relative bargaining strengths of the parties to the contract
- any undue influence, pressure or unfair tactics which may have been used, and
- any other relevant matters.

In addition, owner drivers have access to the unfair contract regime under the IC Act, provided their service contract falls within the scope of the IC Act.

Some states have introduced legislation addressing owner driver specific issues. These states recognise owner drivers as a vulnerable group of workers and have introduced legislation aiming to improve their position. Victoria and WA have adopted legislation that seeks to improve the situation of owner drivers by implementing disclosure requirements in the context of consignor/carrier relationships and publishing guideline freight rates based on the need to ensure sustainable revenue levels, including award-equivalent wages for owner-drivers.

In 2003, the Victorian Government released a report into the situation of owner drivers and forestry contractors which identified a number of problems regularly suffered by owner drivers, including:

- low rates of income
- long hours of work
- health and safety effects and detrimental effects on families
- poor business skills
- information imbalances and ill-informed business decision making, and
- poor bargaining positions.

The Victorian report's recommendations moved away from the approach taken in NSW, where owner drivers are 'deemed' to be employees with award rights. Instead, the report recommended treating owner drivers as small businesses, within a framework of commercial laws. The report also suggested giving owner drivers and forestry contractors some additional protections and avenues for challenging harsh business practices.

Implementation of the WA and Victorian legislation, which include guideline rates and industry codes, has occurred recently and evaluations have not been undertaken, so drawing any firm conclusions regarding their impact would be difficult. Victoria has experienced a decline in relative fatality numbers since 2004. The regulatory system took effect in December 2006. There is currently no data or analysis on compliance with the guideline rates or take-up of other aspects of the legislation in that state. There is also no obvious trend of improved fatality performance since commencement of the regulatory framework in WA (in WA, legislation was enacted in 2007 and came into effect 1 August 2008 (with the Code of Conduct taking effect from 1 July 2010).

NSW has for many years operated a system of contract determinations' under its industrial relations system, setting rates and other employee like conditions for independent contractors in the transport industry, resulting in drivers being provided with award-style protections. The NSW system applies only to the intrastate or short haul sector (covering a diverse array of transport activities from refrigerated transport to courier services) and only to owner drivers of a single vehicle operation.

While the NSW industry has had its rates subject to determination by an industrial tribunal, available data does not allow for a meaningful analysis of performance. In 2007, NSW accounted for 32.4 per cent of fatalities involving articulated trucks but only 20.5 per cent of kilometres travelled by

articulated trucks. Care should be taken with analysis of the data, as NSW is a major freight thoroughfare and the mandatory system applies to a limited part of the road transport industry.

Transport and Safety Regulations

The states and territories have responsibility for regulation of the transport industry, as well as occupational health and safety. Consequently, each state and territory has their own road rules, licence categories, registration procedures and legislation that relate to the trucking industry.

Currently, a process is underway to nationally harmonise occupational health and safety laws, with Safe Work Australia developing national model laws which the Commonwealth and each state and territory will implement by the end of 2011.

The NTC is primarily responsible for developing and evaluating model, national transport laws for adoption in each state and territory. Table 1 below, provided by the NTC in 2010, outlines implementation of model transport

Table 1 Implementation of model transport laws

NTC reform	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
Mass & loading (M&L)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Oversize/overmass vehicles (OSOM)	DNL	Yes	DNL	DNL	DNL	DNL	Yes	Yes
Restricted access vehicles (RAV)	DNL	Yes	DNL	DNL	DNL	DNL	Yes	Yes
Compliance & Enforcement Bill (ATC 11/03)	Yes	Yes	In progress	Yes	Yes	Yes	Yes	In progress
Intelligent Access Program (IAP) (ATC 12/05)	-	Yes	-	Yes	Yes	-	Yes	-
Fatigue (ATC 02/07)	-	Yes	In progress	Yes	Yes	In progress	Yes	Not implementing
Speeding (ATC 01/08)	-	Yes	-	Yes	Yes	In progress	Yes	-
Dangerous goods	Yes	Yes	Yes	Yes	Yes	In progress	Yes	Yes

DNL = Does not use legislation
Source: NTC, 2010

Chain of responsibility (CoR) provisions have been developed to deal with four areas of road transport activity, including fatigue and speeding, and requires that each party in the chain takes reasonable steps to ensure that breaches of the road law do not occur. CoR apportions criminal liability to supply chain parties who, through action or inaction, contribute to a breach and therefore bear a level of responsibility for it.

For fatigue and speeding in particular, new restrictions have been introduced to deal with requests and contracts or agreements that may encourage or require breaching driving hours or speed limits. The legislation prohibits such requests in contracts or agreements.

Other on-road safety initiatives

Several other initiatives are being developed or considered by the Government and are likely to have an impact on road safety, including:

- the establishment of the National Heavy Vehicle Regulator (NHVR), which is to commence in 2013 and will administer new national heavy vehicle laws¹⁴
- the National Road Safety Strategy 2011-2020, which was recently endorsed by the Australian Transport Council (ATC) and includes a series of specific initiatives to improve safety in the road transport industry,¹⁵ and
- the Draft National Land Freight Strategy, which includes dedicated freight routes and is likely to address a number of safety issues in the industry.¹⁶

These initiatives have been taken into account when examining the “status quo” position in relation to the impact analysis around the introduction of safe rates which is presented in a later chapter.

2.3 Road transport scenarios

The road transport scenarios analysed in this RIS are defined in terms of the key market segments. These segments are in turn defined by the major parameters which will comprise the cost benefit analysis.

Underpinning these segments is an assumed typical supply chain. The supply chain refers to the network of consumers, retailers, distributors, transporters, storage facilities, suppliers and producers that transport goods that potentially may use two or more modes of transport from the point of production to the point of sale, and includes all facilities used between those points. In particular, road transport plays an important role that contributes approximately 40 per cent of the domestic supply chain.

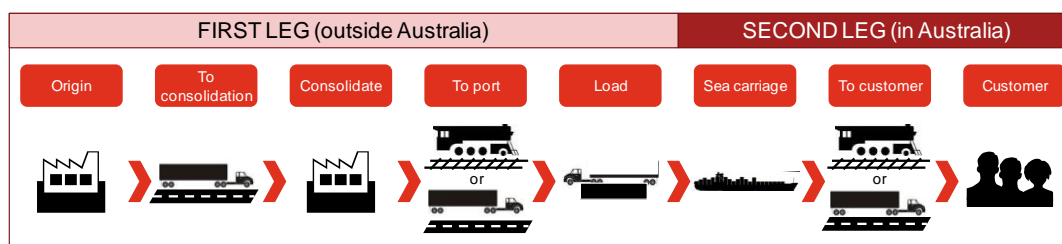
Figure 1 and This figure shows the role of road freight within the international import supply chain.

Figure 2 below present the role of road freight within the broader supply chain, both international and domestic.

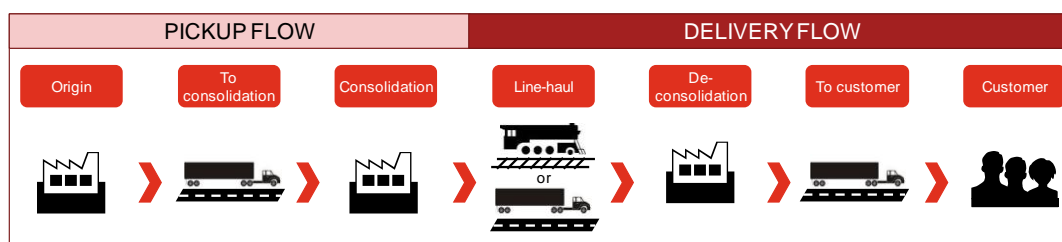
¹⁴ <http://www.ntc.gov.au/viewpage.aspx?documentid=1931>

¹⁵ <http://www.atcouncil.gov.au/documents/atcnrss.aspx>

¹⁶ <http://www.infrastructureaustralia.gov.au/freight/>

Figure 1: Overview of typical international import supply chain

This figure shows the role of road freight within the international import supply chain.

Figure 2: Overview of typical domestic supply chain

Source: National Transport Commission 2009, Supply Chain Pilots Draft Position Paper, March 2009, NTC, Canberra, ACT.
This figure shows the role of road freight within the domestic supply chain.

Heavy vehicles account for the largest proportion of the road freight task in Australia. Australian road freight statistics most commonly distinguish three broad heavy vehicle categories:

- light commercial vehicles - motor vehicles of less than 3.5 tonnes gross vehicle mass (GVM) constructed for the carriage of goods;
- rigid trucks - motor vehicles exceeding 3.5 tonnes GVM with a load carrying area; and
- articulated trucks - motor vehicles constructed primarily for load carrying, and consisting of a prime mover with a turntable device for towing a semi-trailer.

In 2001, about 80 per cent of freight vehicles were reported to be light commercial vehicles, with 15.7 per cent rigid trucks and 2.9 per cent articulated trucks¹⁷. According to the National Land Freight Strategy Discussion Paper released in February 2011, approximately 18 per cent of relative road use is by light commercial vehicles, with heavy vehicles using about 20 per cent¹⁸.

In addition to vehicle categories, the road transport industry can also be segmented according to indicators such as trip length, commodity carried and location. For the purpose of this RIS, the impact analysis will focus on the following sectors/scenarios which were selected on the basis of providing a representative cross section of key road transport characteristics as follows:

- long haul road freight

Half of the road freight in Australia (tonne kilometre) is classified as 'long distance' freight. In general, long distance freight is classified as that which has an average trip length of 300-500 kilometres^{19,20}. This segment of the market is expected to account for 60 per cent of road freight

¹⁷ BITRE Working Paper 60, p 24

¹⁸ http://www.infrastructureaustralia.gov.au/publications/files/NLFS_220211.pdf

¹⁹ Australian Transport Safety Bureau 2001, *Driver fatigue: A survey of long distance transport companies in Australia*, Information Paper CR/198, ATSB.

²⁰ ARTIO and Queensland Truck Association 2011, *Response to Safe Rates, Safe Road Directions Paper*, 11th February 2011, <http://www.qta.com.au/pdf/2011/Safe%20Rates%20Safe%20Roads%20Submission%20by%20ARTIO%20Qld%20&%20QTA%20Ltd.pdf>.

by 2030²¹. As such, most of the interstate and part of the intra-state freight task falls within this category.

- short haul quarried

The quarrying industry in Australia is expected to generate revenue of about \$9 billion in 2010/11²². Road is the primary mode for moving product between rock quarries, sand and gravel extraction sites, cement production and distribution facilities and concrete batching plants throughout the nation.

- short haul agriculture

The transport and logistics sector plays an important role in Australia's agricultural sector. This is generally short haulage transport where most of the origins and destinations are located within the same region. In the broader agricultural sector, the key sub-groups of commodities are a) crops, b) livestock and other; and c) livestock products. This sector accounts for approximately 15 per cent of total road freight volume (TKM)²³.

Data suggests that the agricultural sector is comprised of shorter distance freight tasks compared to other segments of the road transport market, on average. Moreover, the agricultural sector accounts for approximately 50 per cent of heavy vehicles but contributed only 15 per cent of total network tonne volumes.

Further information on these can be found in Appendix A.

²¹ BITRE 2011, *Road Freight Estimates and Forecasts in Australia: Interstate, Capital Cities and Rest of State*, Research Report 121, http://www.bitre.gov.au/publications/74/Files/Report_121.pdf.

²² IBIS World 2011, *Concrete slurry manufacturing in Australia*, Industry Report C2633; *Concrete and line manufacturing in Australia*, Industry report C2631; and *Gravel and sand quarrying in Australia*, Industry report B1411

²³ ABS 2007, Survey of motor vehicle use, cat no. 9208.0

3 Statement of the problem

While much of the discussion over the last two to three years has been around establishing an institution or powers to set safe rates, the underlying key issue being addressed relates to safety on the roads and how remuneration levels contribute to safe outcomes. From this perspective, it is important to examine the trends in safety incident data, the link between on-road safety outcomes and remuneration and/or working conditions and, finally, the economic theory and possible market failures and externalities relevant for safe rates.

3.1 Safety incident data

According to workplace safety data, truck driving is the occupation/industry with the highest incidence of fatal injuries. In this context, the Australian Government considers that safety outcomes remain at unacceptable levels, for both drivers and the broader community.²⁴

When a truck is involved in a safety incident, the general public is affected. If directly involved then statistically it is likely that the other party will suffer worse consequences than the truck driver. If indirectly involved then there is an impact on shared infrastructure (damage and delays) and monetised and non-monetised community costs. In this sense, the transport industry has a unique and larger burden than many other industries in relation to safety outcomes.

According to the Department of Infrastructure and Transport, in the 12 months to December 2010, 232 people were killed in 197 accidents involving heavy trucks. There were 25 deaths per 100,000 workers in the industry in 2008-09 which is ten times the average for all industries.

According to National Transport Insurance (NTI) data research, nearly half of all truck crashes in 2009 are reported to have involved inappropriate speed for the conditions and/or fatigue from either the truck driver or the other driver in two vehicle crashes. Yet in terms of fatalities involving heavy vehicles, most accidents are not primarily the fault of the truck driver. In fatal heavy vehicle crashes involving other vehicles, the other driver was at fault in 82 per cent of the accidents.

3.1.1 Death and accident rates

In Australia, there has not been a significant shift in the annual number of fatalities resulting from crashes involving articulated trucks between the early 1990s and 2007 despite the overall decline in the annual road toll (Department of Infrastructure, Transport and Regional Development, 2007, 2008). According to the Australian Transport Safety Bureau (ATSB), the 1,634 crash deaths in 2003 are comparable to those in 1950, when there were 1,643 deaths. However, current death rates calculated as a percentage of the population are of course much lower.

In 1950 the death rate per 100,000 people was 20.1 and the death rate per 10 000 registered vehicles was 11.8. In 2003, the death rate per 100,000 people was 8.2 and the death rate per registered vehicles was 1.2. These gains are for all registered vehicles. However, when different types of vehicles are examined, it emerges that the safety gains for heavy freight vehicles are less than for all vehicles.²⁵

Additionally, according to the Department of Infrastructure and Transport's (DoIT) *Fatal heavy vehicle crashes Australia quarterly bulletin Oct-Dec 2010*, during the 12 months to the end of

²⁴ National Transport Commission 2008, *Safe Payments – Addressing the Underlying Causes of Unsafe Practices in the Road Transport Industry*, National Transport Commission, October 2008, p.5.

²⁵ Australian Transport Safety Bureau

Statement of the problem

December 2010, 232 people died from 197 crashes involving heavy trucks. The statistics are broken down as follows:

- 147 deaths from 127 crashes involved in articulated trucks
- 85 deaths from 70 crashes involving heavy rigid trucks.

Also during the 12 months ending December 2010, fatal crashes involving articulated trucks:

- increased by 6.7 per cent compared with the corresponding period one year earlier
- decreased by an average of 5.1 per cent over the three years to December 2010.

In the same time period, fatal crashes involving heavy rigid trucks:

- decreased by 4.1 per cent compared the corresponding period one year earlier
- decreased by an average of 5.6 per cent per year over the previous three years.

When compared to *overall* road deaths, according to the Road deaths Australia June 2011²⁶ bulletin, during the 12 months ended June 2011 there were 1,304 deaths. This is a 7.2 per cent decrease from the 12-monthly period ending June 2010, with 1,405 deaths in that period.²⁶

While the time periods for this data collection are not directly comparable to the heavy vehicle bulletin time period, there remains a more positive downward movement in the direction of road deaths for overall road deaths when compared to crashes for trucks – particularly for articulated trucks where the latest statistics show an increase of 6.7 per cent over the corresponding period one year earlier.

This data appears to suggest that there is an issue around improving safety with regard to the heavy vehicle sector, which does not seem to be improving its safety outcomes in line with the overall road safety statistics.

3.1.2 International comparisons

The then NRTC received a commissioned report examining Australia's heavy vehicle safety record in an international context in 2002. The report found that Australia's heavy vehicle fatality rate per truck kilometre travelled was approximately mid-range in relation to a number of broadly similar countries chosen for comparison. For example, fatality rates were found to be:

- 47 per cent higher than that for the United States and 39 per cent higher than Great Britain
- comparable with Canada and Germany, and
- 45 per cent below France and 55 per cent below New Zealand.

The study considered the reasons for Australia's apparently poor performance relative to the United States and Great Britain. It concluded that the higher truck fatality rates on Australian roads could largely be explained by the lower proportion of truck travel on divided and limited access roads in Australia, with truck speed limits possibly also being a factor. Problems of low freight rates having an adverse impact on safety were not mentioned in this paper.

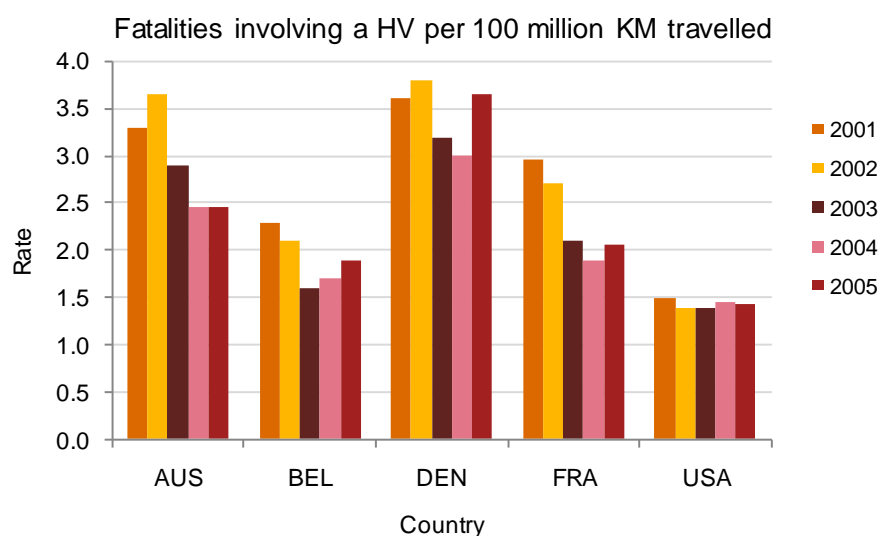
Dr Jeff Potter of the NTC presented a comparison of Australia's heavy vehicle fatality rate (i.e. per vehicle kilometre) with that of four other countries at a 2008 International Symposium on Heavy

²⁶BITRE, *Road Deaths Australia*, June 2011 and *Fatal Heavy Vehicle Crashes Australia Quarterly Bulletin*, Oct-Dec 2010.

Vehicle Transport Technology. This comparison used data from 2001 to 2005. Figure 3 below, is reproduced from this presentation. It shows that Australia's fatality rate was below that of Denmark but above that of the other three countries compared (Belgium, France and the United States).

Therefore, while it would appear that over time the Australian heavy vehicle industry has demonstrated improved safety performance; its fatality rates remain higher in comparison to similar countries. This may imply that there is still some way to go in terms of safety improvements in this area and that without further action there may be no further downward movement in fatality rates. However, it is important to also note that international comparisons of safety are difficult due to differences such as those in road infrastructure and other conditions.

Figure 3 International Comparisons of Heavy Vehicle Fatality Rates



Source: *Analysis of International Heavy Vehicle Safety Data*. Paper presented by Jeff Potter, National Transport Commission, to the 10th International Symposium on Heavy Vehicle Transport Technology. Paris, May 19-22, 2008.

This chart shows fatalities involving a heavy vehicle per 100 million kilometres travelled in Australia, Belgium, Denmark, France and the USA from 2001 to 2005.

3.1.3 On-road risk factors

The research continues to point out speeding and fatigue in the road transport industry as the major factors impacting on road safety outcomes. The NTC also lists drug use, poor vehicle maintenance, inattention and road or environmental conditions as other contributing factors to poor safety outcomes in the road transport industry.²⁷ Poor vehicle maintenance, for example, could be directly associated with low remuneration rates, as owner drivers may not be able to afford the cost of regular maintenance and/or may not be able to stop driving for maintenance purposes.

The NTC report also presents data based on NTI claims in excess of \$50,000 in 2002-03, which show that almost 30 per cent of heavy vehicle accidents are caused by fatigue and in excess of 25 per cent of accidents are caused by inappropriate speed.²⁸

²⁷ National Transport Commission 2008, *Safe Payments – Addressing the Underlying Causes of Unsafe Practices in the Road Transport Industry*, National Transport Commission, October 2008, p. 7.

²⁸ National Transport Commission 2008, *Safe Payments – Addressing the Underlying Causes of Unsafe Practices in the Road Transport Industry*, National Transport Commission, October 2008, p. 8-9.

The most recent NTI study into serious transport accidents involving heavy trucks reported to the insurer during 2009 found that:

- inappropriate speed for the conditions was found to be the leading cause of serious accidents causing 31 per cent of these accidents
- in 7 out of 10 serious truck crashes, no other vehicle was involved (this is a factor which is often attributed to fatigue and/or speed)
- in fatal crashes involving other vehicles, the other driver was at fault in 82 per cent of the accidents. The context behind this is while truck drivers are not necessarily at fault in the majority of accidents, they need to be alert to other road users behaviour
- 23 per cent of serious truck crashes occurred on Australia's National Highway 1. Queensland's Bruce and Warrego Highways were the worst with proportionally more incidents than any other major roads
- the Hume Highway is the best performing highway with the fewest major accidents
- the bigger they are, the safer they are – B Doubles carry 46 per cent of freight yet account for only 28 per cent of serious truck crashes. The explanation behind this is that semi-trailers are disproportionately over represented (60.1 per cent of major incidents) as they tend to operate on the worst of the road network, with ageing equipment and less experienced drivers.²⁹

In summary, these findings suggest that speeding and fatigue remain problems in the road transport sector. It also suggests that there may be variations in safety outcomes amongst different vehicle types and/or on different routes. These issues will be explored further in the impact analysis section of the RIS.

3.2 The link between remuneration rates and safety

3.2.1 Research findings

The NTC report found there was a link between driver remuneration and safety outcomes in the heavy vehicle industry. The NTC Report, which was based on commissioned research and other findings, concluded that economic factors, including pressure applied throughout the supply chain, create an incentive for truck drivers to speed, work long hours and use illicit substances.³⁰ For example, Williamson et al (2001) found that drivers compensated through a 'payment-by-results' method were twice as likely to report being fatigued on at least half of their trips than drivers who are paid by an hourly rate. They also found that, while there was no statistically significant difference between employee characteristics in the incidence of breaking working hours regulations, 46.6 per cent of owner drivers reported the need to do enough trips to earn a living as the reason for breaking these regulations, while only 25.6 per cent of employee drivers reported that they were likely to do the same.³¹

Research carried out by Rodriguez *et al* (2006) found a strong correlation between driver pay rates and crash risk. The report notes that at low pay levels, the net effect of a higher pay rate is lower crash risk, but this occurs at a declining rate as pay rises continue and at high pay levels reverse. In summary this

²⁹ National Truck Accident Research Centre 2011, *Major Accident Investigation Report*, Brisbane.

³⁰ National Transport Commission 2008, *Safe Payments – Addressing the Underlying Causes of Unsafe Practices in the Road Transport Industry*, National Transport Commission, October 2008, p 19.

³¹ National Transport Commission 2008, *Safe Payments – Addressing the Underlying Causes of Unsafe Practices in the Road Transport Industry*, National Transport Commission, October 2008, p 14.

study found that there is a significant probability that there is a correlation between remuneration and safety performance, particularly where very low levels of remuneration are concerned.

Other research directly comparing remuneration and safety also demonstrated statistically significant correlations between pay and safety performance, albeit different findings. These reports found:

- a. a very small effect (Nafuko et al 2007)
- b. a very large effect (Belzer et al 2002).

Low Market Power

Furthermore, owner drivers are reported to face low market power. While there are high capital costs of entry into the industry, according to stakeholder submissions, most potential owner drivers are able to take out leasing contracts with the usual array of finance companies. The key concern however, is the significant amount of debt associated with owning a truck and the fact that it is a depreciating asset. This puts pressure on owner drivers to take on work in order to cover costs and can be a significant barrier to exit.

Conventional economics usually models people choosing between uncertain outcomes as exhibiting risk aversion; that is, they dislike variations (both gains and losses) from an expected amount. However, many experiments show that people tend to evaluate choices from a 'reference point' (say current income, wealth or market prices) rather than the expected value of a choice. More importantly, people suffer more from a loss than they benefit from an equivalent gain (evaluated from this reference point).³²

In the context of owner drivers, this can be linked to the anecdotal evidence provided in submissions to the NTC Report which described the situation of owner drivers accepting unfavourable contracts terms as this is seen as better than not having contract at all. This is also linked to the market failure described above in terms of truck drivers not being able to easily exit the industry without significant penalty, i.e. a barrier to exit.

A further concern with behavioural issues around individual decision-making is that, where asymmetrical bargaining positions are at play, the capacity of individuals to make calculated and considered decisions is further compromised.³³ Submissions from various unions and individuals certainly indicate that the bargaining power of larger firms is substantially greater than that of individual owner drivers. Contract outcomes for individual owner drivers are unlikely to be optimal in this environment.

Low Average Earnings

Available data indicates that remuneration rates for Australian owner-drivers have been low over a long period. The most recent data on owner driver remuneration was reported in 2003, when the average pre-tax profit was \$20,638 following payment of expenses (from ACIL Tasman, 2003, *Freight rates and safety performance in the road freight industry*, A report prepared for the Standing Committee on Transport Working Group, p. viii). In today's terms, this could be considered to equate to an average income or wage equivalent of \$29,465 before tax.

PwC has examined ABS Census 2006 data to estimate the extent of remuneration to owner-drivers. The data was segmented into an assumed or "notional award" band which is below \$600 per 35 hour week. The numbers of employee and owner drivers that fell below that threshold was taken as a proportion of

³² Productivity Commission 2008. *Review of Australia's Consumer Policy Framework*, Canberra, Appendix B, p6.

³³ Productivity Commission 2008. *Review of Australia's Consumer Policy Framework*, Canberra, Appendix B, p16.

the total number of drivers in the respective categories to identify the proportions which are underpaid. Analysis indicates that 29 per cent of owner drivers are underpaid.

Table 2 Proportions of drivers below 'notional award' remuneration

Weekly income band (as defined by 2006 Census)	Average point estimate (\$2011)⁽¹⁾	Owner managers of incorporated (no.)	Owner managers of unincorporated (no.)
Nil income	0	43	59
\$1-\$149	120	39	81
\$150-\$249	240	94	141
\$250-\$399	420	460	477
\$400-\$599	599	1,477	1,332
Total		7,257	7,268
% 'underpaid'		29	29

Note (1): The average income estimate per income band was extrapolated in considering the skewness of distribution towards the mean point - towards >\$1,000 / right of the distribution - as per the observed normal distribution. i.e. in each income group, the estimated average income has been adjusted accordingly above the mid-point where appropriate and rounded to the nearest \$50. Then the estimates were escalated by WPI.

Note: the information above has been retrieved based on all truck drivers working in the road freight sector and working more than 35 hours per week. Of the drivers who reported working a minimum of 35 hours per week and reported an average of more than 40 hours per week, those with a reported income below \$600 per week are defined as underpaid in the model. In the absence of data on incomes by grade, the analysis was unable to describe the award rates by experience and grade nor the mix of drivers' experience level.

From 1 January 2010, the national workplace system commenced operation and most employee drivers across Australia became covered by a safety net comprising the National Employment Standards and modern awards. Under the national workplace relations system, one of four modern awards apply to employee drivers depending on the sector of the industry they work in:

- Road Transport (Long Distance Operations) Award 2010
- Road Transport and Distribution Award 2010
- Transport Industry (Cash in Transit) Award 2010
- Waste Management Award 2010

Most modern awards are subject to transitional arrangements for a range of pay and pay related matters. Transition from pay rates contained in pre-modern awards to the modern award standard commenced on 1 July 2010 and will be completed by 30 June 2014.

In comparison to owner drivers, the current award rate for a grade 4 long distance vehicle driver is \$24.47 per hour. A standard working week under the award is 38 hours but data suggests that truck drivers work up to 9 hours per week overtime, which would be paid at a higher rate (for example, time and a half). An award wage for a 47 hour week, using these assumptions, would be \$65,530.66 per

annum before tax. Many employee drivers would be on higher rates, as they would be covered by enterprise agreements.

The issue highlighted above regarding the proportion of owner drivers being underpaid relative to the assumed notional award would appear to be linked to the fact that, according to behavioural economics theory, people do not make decisions in a considered or calculated fashion; they often use ‘rules of thumb’ in making complicated decisions.³⁴ In the context of owner drivers, this can be referenced back to the ACTU and TWUA submissions which indicate that owner drivers do not necessarily have the right information with which to negotiate an appropriate freight rate in order to recover an appropriate amount to reflect their labour cost.

In fact, the 2005 Victorian report into the industry which gave rise to that state's Owner Drivers and Forestry Contractors Act 2005, found that owner drivers may accept rates that do not provide them with an adequate income plus return on their investment due to inadequate knowledge of the costs that they incur in operating their business. The disclosure requirements and some other aspects of the Victorian legislation are predicated on this rationale.

It can of course also be argued that owner drivers that have been involved in the industry are unlikely to remain ignorant of their cost function and that, given that most owner drivers have substantial industry experience, the size of this information asymmetry is unlikely to be great. However, even in this context, a second market failure may be relevant: by the time owner drivers reach this level of understanding of their cost function, many may have commitments such as long-term truck leases which cannot easily be liquidated, at least without significant penalty. This situation is described as constituting barriers to exit, and constitutes another standard example of a market failure.

Another explanation for drivers accepting low rates of pay is that people tend to care about the present.³⁵ For example, people may think that they will stop smoking tomorrow, but when tomorrow comes, they overweight the present benefits of smoking relative to the larger costs of lifetime addiction. In the context of owner drivers, this can be linked to the evidence presented in as part of the NTC report and union submissions which show that owner drivers feel pressured to accept work even if it is not on favourable rates as it allows them to meet their immediate truck lease and other commitments.

A related behavioural issue, which is related to people valuing the present, is what is referred to as “the endowment effect” which is a strong driver behind people’s reluctance to change. An aversion to change increases the importance of choosing the correct default option for policies designed to engender change.³⁶ In the context of owner drivers, this can be linked to the evidence presented in submissions which shows that owner drivers feel pressured to continue to honour existing freight contracts even if they are not struck on favourable terms. Again, this may also point to barriers to mobility/exit where drivers feel compelled to keep working under what they perceive to be universally unfavourable conditions due to financial pressure associated with capital investments in their vehicles, etc.

³⁴ Productivity Commission 2008. *Review of Australia’s Consumer Policy Framework*, Canberra, Appendix B, p5.

³⁵ Productivity Commission 2008. *Review of Australia’s Consumer Policy Framework*, Canberra, Appendix B, p6.

³⁶ Productivity Commission 2008. *Review of Australia’s Consumer Policy Framework*, Canberra, Appendix B, p16.

Long working hours and unpaid working time

Past research and submissions to the NTC Report received from owner-drivers, the TWUA and industry associations highlight other issues relating to payment systems.

There is evidence to suggest that owner-drivers work long hours. For example, in the week prior to the November 2002 ABS Labour Force Survey, employers working full time in their business worked an average of 58 hours per week. Therefore, owner-drivers appear to be working long hours for low remuneration.

Unpaid queuing time, or demurrage, was highlighted as a major issue in the transport industry during fatigue related reforms. It was also highlighted that many drivers are not paid for time spent loading and unloading their vehicles when making or picking up deliveries. This can encourage drivers to make up for the lost time by fitting in that extra trip. The issue of 'back loading' has also been highlighted in submissions by stakeholders as a significant problem for owner-drivers. This is where drivers are paid significantly less for the back leg of a trip, which is particularly problematic where they have little or no load for the return leg.

A behavioural issue that comes into play to make up for what are perceived to be "lost earnings" is overconfidence. Put simply, this where people overestimate their own abilities to, for example, effectively recover costs. Svenson (1981) found that 80 per cent of respondents rated themselves in the top 30 per cent of drivers. Ausubel (1999) found that individuals over-respond to low pre-teaser interest rate offers on credit cards. Those who accept offers naively think they will not borrow much on the credit card after the teaser rate is removed. In the context of owner drivers, this can be linked to the fact that despite the safety risks inherent in driving under time pressure or while fatigued, it is argued in submissions that drivers continue to perform work under these circumstances in order to make up for unpaid working time.

3.2.2 Consequences of no action

The Australian road transport industry generally has a strong safety performance and key safety initiatives, such as CoR and fatigue management laws which are being bedded down, so further improvements in road safety can be expected to continue. Important initiatives including the NHVR and the National Road Safety Strategy should have a positive effect on road safety. Governments are also continuing to invest in road infrastructure, including quality rest stops, divided roads and improved freight corridors, which the NTC put forward as major catalysts for a safer road transport industry.

However, as the current system does not address the link between remuneration and safety, no action may mean that the financial incentive to engage in practices which are often a factor in heavy vehicle crashes - speeding, working long hours and using illicit substances - would remain and potentially undermine these other Government investments. Improvements in road transport laws are underway but the current system is reported in stakeholder submissions to lack consistency and uniformity and is complex at the state level, especially for owner drivers.

Despite the developments outlined earlier, it would appear that the investigation of further reforms may be warranted in relation to low remuneration and inappropriate payment systems for owner drivers, which are antecedent factors to fatigue and speeding. Although the fatigue laws should provide a good incentive to improve industry practices, they do not specifically address practices such as unpaid queuing time. Currently, costs for unpaid working time, such as time spent queuing, is a cost which is absorbed by drivers, creating no incentive for other parties to address the efficiency issues leading to that practice. By requiring the real cost of this time be passed on in the cost of moving those goods, there may be efficiency gains and potential improvements in safety outcomes.

The highly competitive nature of the transport industry and the commercial pressures placed on drivers are widely acknowledged through numerous reports and inquiries including the NTC Report into Safe Payments, where the Australian Trucking Association submission highlighted that:

“economically powerful industry clients have the commercial influence to determine the price of transport services and, in many circumstances, key conditions relating to the performance of transport work. Successive instances of contracting out to small fleet operators and owner-drivers can exacerbate this phenomenon, particularly in the long distance sector.”

The operation of the transport market and its competitive nature can affect owner drivers’ abilities to achieve payment rates and methods that would allow them to perform their work legally and safely. Addressing drivers’ lack of bargaining power is critical to establishing a system of safe payments. On this basis, a remuneration system to address the safety link may be an important step in further requiring those up the chain of responsibility to address those incentive factors.

3.3 Summary

While transport safety outcomes have improved over the years – and certainly relative to increasing population and increased freight – there are still an unacceptably high number of truck accidents. The concern is that without further action, the number of accidents will remain high.

There is some research to suggest that the remuneration for drivers is a factor in safety outcomes, however data at this point in time is limited and being definitive around the causal link between rates and safety is difficult. For example, speed and fatigue are often identified as the primary cause for a crash but it is a much harder task to prove that drivers were speeding because of the manner or quantum of their remuneration.

Despite the fact that studies and academic literature have not conclusively proven the extent to which rates and safe transport outcomes are related, there are a number of market failures or factors that would suggest that it is not unreasonable to expect that the manner in which owner drivers are remunerated will impact on safety. One of the most pressing of these relate to the ability of owner drivers to appropriately assess risk and how their driving behaviours (including negotiating appropriate freight rates) impacts on safety. The other relates to the impact of the supply chain and relative bargaining power and that those up and downstream of the driver do not bear the direct impact associated with an accident (unless they are unlucky enough to be the ‘other party’) – this relates to an externality argument whereby rate and remuneration agreements don’t adequately account for the risk and expected cost of an accident.

Broken down into simple terms, this means that owner drivers cannot adequately take into account the risk factors involved when negotiating freight contracts – either due to lack of full information and/or economic pressures – which results in unsafe on road behaviour which ultimately impacts the driver and other road users. It is important to note in all of this that the consumer is not directly impacted and that those up and down the supply chain generally do not incur the full cost of an accident. Indirect impacts on the community include the cost of health care following heavy vehicle accidents and infrastructure replacement costs, etc.

These findings appear to support the NTC Report which ultimately found that the regime covering owner drivers needs to be mandated as:

*“attempts to set minimum rates for owner drivers on a voluntary basis have repeatedly failed ... because they lacked the capacity to ensure meaningful coverage and compliance (inevitably breaking down under competitive pressure)”.*³⁷

³⁷ National Transport Commission 2008, *Safe Payments – Addressing the Underlying Causes of Unsafe Practices in the Road Transport Industry*, National Transport Commission, October 2008, p.43.

4 Objectives

The primary objective associated with the safe rates proposal is to improve safety performance in the heavy vehicle industry. The desired outcome is safer driving practices and fewer crashes for truck drivers. This will reduce the number of deaths and injuries for both truck drivers and the general public, given the high percentage of victims who are not occupants of the heavy vehicle involved in the collision, and reduce non-human costs such as property damage.

The aim of Government action to achieve the objective and desired outcome is to reduce the incentive for employee and owner drivers to drive in ways that increase the risk of deaths and injuries on the road. While there are already systems in place to penalise drivers who speed or drive when fatigued, the Government can play an important role in removing financial incentives to drive unsafely.

Improving equity for owner drivers, in terms of income distribution, has been acknowledged as a major driver of related state government legislative action in recent years. Evidence from submissions and available data shows that owner drivers generally work longer hours and are paid considerably less than employee drivers.

To the extent that market failures can be addressed through safe rates then this will also improve equity for owner drivers. It is considered that addressing these factors is important as they may be leading to under recovery of efficient transport resource costs.

A further consideration around the safe rates proposal is to ensure that it does not undermine the economic efficiency of the industry. This implies that the proposal's outcomes need to be proportional to the safety issues it is seeking to address.

5 Statement of Options

As discussed in the background section, the options considered in this Regulatory Impact Statement are proposed in the context of formulating the Government's response to the 2008 National Transport Commission Report, *Safe Payments: Addressing the underlying causes of unsafe practices in the road transport industry* (the NTC Report). This report presented extensive research and data and ultimately presented options for the Government to respond in relation to the development of a safe payments system for owner drivers.

Accordingly, this RIS examines the potential impacts associated with three key options:

1. maintaining the existing federal and state-based legislation for employee drivers and owner drivers (where applicable) - this option is the base case for this RIS
2. introducing a voluntary system of payments for owner drivers and chain of responsibility arrangements
3. establishing the tribunal, with discretion to set and maintain remuneration rates and/or remuneration related conditions for employees, owner drivers and the supply chain, if safety outcomes would improve as a result of the decision.

5.1.1 Option 1

Option 1 comprises the Base Case for this RIS. It involves maintaining the current regulatory frameworks in the road transport industry that deal with employee driver pay and conditions separately to arrangements for owner drivers (status quo). This option incorporates relevant initiatives scheduled to commence in the near future, including establishment of the National Heavy Vehicle Regulator and commencement of the national heavy vehicle laws, as well as the National Road Safety Strategy 2011-2020.

Detail on the current regulatory arrangements for both owner drivers and employee drivers can be found in Section 2 – Background.

Option 1, by definition, is not expected to change the remuneration arrangements for either employee drivers or owner drivers. Further detail on this and other anticipated impacts is provided in the following impacts analysis section.

5.1.2 Option 2

This option involves implementing a suite of measures, such as:

- legislating against unsafe practices
- setting guideline rates of remuneration and conditions
- expanding accreditation schemes, and
- introducing accessible dispute resolution services.

The suite of measures would address inequity issues for owner drivers in the road transport industry, with development of industry standards and guideline rates, as well as regulating some particular problem areas, such as payment for loading/unloading and waiting.³⁸

³⁸ Putting in place effective compliance monitoring and enforcement activities may be challenging and self reporting of breaches will be essential.

This non prescriptive system of payments and conditions applying to owner drivers and the supply chain could be implemented in several ways. For example, the Victorian model of setting a guideline rate of pay for owner drivers, established in the *Owner Drivers and Forestry Contractors Act 2005*, could be replicated in other states and territories. This would require the states and territories to agree to the proposal.

Another approach would involve a guideline or voluntary rate and other industry standards established at the national level, for example, as part of an industry code of practice. This approach could be implemented as a policy initiative or using a regulatory approach. Funding for the suite of measures could be provided by both governments and the industry.

An industry council could be established to oversee implementation of the suite of measures, including development and publication of guideline rates, as well as setting other industry standards. The Government could be responsible for introducing accessible dispute resolution services, which may involve making better use of current systems. If the suite of measures includes legislating against unsafe practices, the Government could develop the legislative framework and establish a compliance system.

Key features of this approach are:

- voluntary system
- includes guideline rates or costing models of pay and payment methods for owner drivers
- includes industry participants, who identify and set the standards, for example voluntary industry standards such as Australian Logistics Council Code or the Australian Trucking Association's TruckSafe
- overcomes information imbalances through improved education and training:
 - for owner drivers to assist them to operate their businesses, and negotiate fairer contracts and
 - for employees and employers with targeted information on awards, employer/employee obligations and the role of the Fair Work Ombudsman
- includes supply chain participants, such as governments and retail industry, who can assist with meeting the standard by requiring compliance with the standard at all levels of the supply chain.

Further detail on this option and its expected impacts is provided in the following impacts section.

It should be noted that there is limited evidence on the effectiveness of the voluntary system. Owner driver voluntary schemes in Victoria and Western Australia have not been evaluated, so the effect guideline rates and conditions have on the remuneration and working conditions of owner drivers cannot be assessed.

5.1.3 Option 3

This option would result in the implementation of a national legislated system for employee and owner drivers, as well as the supply chain, with discretion to set mandatory rates of pay and conditions for owner drivers. For example, pay rates and/or pay related conditions could be set for owner drivers in certain industry sectors, where there is evidence that supports the need for action to address pay and conditions to encourage safe driving practices. The mandatory rates of pay and pay related conditions would be used as a safety net during commercial contract negotiations.

The national legislated system could be either:

- establishing a tribunal; or

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- setting up another system of setting mandatory rates, such as by ministerial determination or a statutory industry body or by extending the Fair Work Act coverage to owner drivers (i.e. the Outworker Model).

The legislation establishing a tribunal and the compliance functions could be in line with those set out in the FW Act. In this case the tribunal would be a statutory body, supported administratively by Fair Work Australia (FWA).

In order to limit the impact on the economy and avoid regulatory duplication, the tribunal would be required to take into account the following criteria when performing its functions:

- the need to promote safe, flexible, efficient and productive work practices
- the effectiveness of any industry based measures already in place to address safety and remuneration issues
- the likely impact on business, including the owner driver, road transport and supply chain businesses, such as productivity, employment costs and the regulatory burden
- the special circumstances of areas that are particularly reliant on the road transport industry, such as rural, regional and other isolated areas, including any localised impacts on employment, prices and services
- the likely impact on the national economy and the effect on the movement of freight across the nation
- the need to avoid unnecessary overlap with the Fair Work Act 2009, the national heavy vehicle laws and other relevant laws, such as workplace health and safety, independent contractor and other transport legislation.

The regulatory framework would also:

- include the road transport industry supply chain, as it can be the cause of unsafe driving by employee and owner drivers
- provide a simple and easy to understand minimum standard of remuneration and remuneration related conditions for employee and owner truck drivers and those using the road transport industry
- educate and inform the road transport industry about the minimum standard of remuneration and remuneration related conditions, as well as other safety related initiatives
- ensure that the guaranteed minimum standard of remuneration and remuneration related conditions cannot be undermined by agreements of any kind.

The tribunal's discretionary powers could result in road safety remuneration orders made for some sectors of the industry and/or orders setting out remuneration related conditions only. Another potential outcome is the tribunal declining to make a road safety remuneration order. The tribunal would decide on the appropriate remuneration rates and/or remuneration related conditions if and where appropriate. With this high level of discretion, together with the need for the tribunal to consider the economic impacts of any decision, the CBA is illustrative only. For example, the tribunal will have to consider a range of issues, including the efficient rate of owner drivers.

Conduct of matters before the tribunal could be in line with those established for FWA, with particular reference to the functions of the Minimum Wage Panel. The powers of the tribunal to inform itself in relation to matters it was considering would be broad and allow all road transport industry participants and other interested parties to contribute. It would be able to use a range of approaches, including (but not limited to):

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- undertaking or commissioning research
- inviting oral or written submissions
- requiring documents, records or other information to be provided
- taking evidence under oath or affirmation
- conducting inquiries
- holding a hearing.

In conjunction with the compliance agency, the tribunal could also have education functions, which could include development of model contracts for industry sectors. These functions could be used as an alternative to setting a remuneration rate and/or remuneration related conditions or they could be used more broadly across the industry, to address equity issues for truck drivers.

If the non-tribunal approach was used, the Government would establish a regulatory framework, which include setting up an industry advisory council to provide advice on the evidence linking remuneration and remuneration related conditions. The council could also assist the Government to set any rates or conditions, which would be issued in the form of a ministerial determination.

An alternative approach would involve a government agency having responsibility for investigating and providing advice on rates and/or remuneration related conditions. Both models could have other functions, similar to those set out for the tribunal, including education and development of resources, such as model contracts. As part of this regulatory framework, compliance issues also need to be addressed.

6 Impact Analysis

6.1 Introduction

The broad approach to the impact analysis is guided by the Australian Government's *Best Practice Regulation Handbook*.³⁹ However, the impact analysis was conducted in the context of the following considerations:

- Given the short study period, this RIS draws on two recent reports, an economic analysis of the concept of safe payment rates⁴⁰ and a Preliminary RIS developed by DEEWR in 2011⁴¹. This RIS builds on the existing analysis, collating and combining the available information to produce a quantified Cost Benefit Analysis (CBA) of the options.
- It is not an objective of this RIS to assess whether the remuneration received by owner drivers recovers efficient cost. While there is evidence that freight rates in some segments of the owner driver market significantly under-recover costs, the extent of this under-recovery, from an economic perspective, must be measured from an efficient rather than observed cost base. However, for the purposes of this RIS, it is assumed that observed freight costs are efficient.
- This RIS recognises that there is a comprehensive heavy vehicle regulatory framework (including Road Rules, Heavy Vehicle Driver Fatigue Model Legislation and Chain of Responsibility Legislation) in place which contributes improving road safety outcomes. However, this RIS focuses on the potential safety impacts specifically related to regulation and legislation concerning driver remuneration.
- This RIS relies upon the considerable research contained in the National Transport Commission's (NTC) 'Safe Payments' Report which links the level of remuneration and the ante decedents of road crashes such as speeding, drug use and fatigue.⁴² The RIS is limited to using the few existing studies which empirically estimate the relationship between remuneration levels and safety (these are described below in **Appendix C**).
- The options do not prescribe a specific remuneration level or structure for owner drivers and employees. Rather, Option 3 describes the establishment of a framework with the power to determine a specific 'safe' rate of pay where appropriate based on the evidence.⁴³ Indeed, a key role of the safe rates Tribunal outlined in Option 3 is to:
 - investigate rates of pay and conditions in the industry based on research and evidence, with the discretion to determine mandatory rates for some drivers as appropriate. For example:
 - set up a work program, so higher risk industry sectors are researched and investigated in priority order (the intention is to provide scope for an approach similar to the Modern Award review process)

³⁹ Australian Government 2010, *Best Practice Regulation Handbook*, Department of Finance and Deregulation, Australian Government, Canberra.

⁴⁰ Jaguar Consulting 2011, *Economic Analysis of Regulating Rates of Payment and Conditions for Safety in the Road Transport Industry*, Revised Final Paper prepared for the Department of Education, Employment and Workplace Relations, August 2011.

⁴¹ Department of Education, Employment and Workplace Relations 2011, *Progressing the Government's Response to the 2008 National Transport Commission Report, Safe Payments: Addressing the Underlying Causes of Unsafe Practices in the Road Transport Industry and the 2010-2011 Safe Rates*, *Safe Roads Directions Paper*, Regulation Impact Statement developed by the Department of Education, Employment and Workplace Relations.

⁴² National Transport Commission 2008, *Safe Payments – Addressing the Underlying Causes of Unsafe Practices in the Road Transport Industry*, National Transport Commission, October 2008.

⁴³ Options 1 and 2 seek to maintain the existing legislative/regulatory frameworks relating to owner-driver/employee remuneration and expanding the pay guideline systems in Victoria and Western Australia to other jurisdictions.

- have discretion to set and maintain rates of pay and/or conditions for both employee and owner drivers
- consider market issues and impacts on road transport businesses and the economy, including cost of living pressures and impacts on rural and regional areas, as currently occurs with FWA decisions on the minimum wage.

Therefore, rather than seeking to estimate the net economic benefit of specific pay rates for a specific road transport segment, the economic impacts of the options are assessed in terms of four road transport scenarios which provide a representative cross-section of the road transport industry in terms of:

- proportion of freight carried by owner drivers
- expected effectiveness of the policy⁴⁴
- commodity transported
- jurisdiction
- transport distance
- vehicle type, and
- existing owner driver remuneration level and structure.

These scenarios and associated logistics chains are defined in **Appendix A**.

- The impact analysis defines the economic, transport demand and crash rate data required to undertake a robust CBA of the options. However, review of the literature and discussions with key stakeholders highlighted significant data gaps. The RIS clearly identifies these data gaps. Where possible, values are assumed and/or ranges are provided. The materiality of the impact of data issues on the CBA results is discussed. Finally, impacts are discussed qualitatively in the absence of data.
- The RIS focuses on quantifying the material impacts of the policy. Given the short study time frame and data gaps, the economic framework in this RIS responds directly to answering the key economic question, namely:
 - *will the societal benefits from improved road safety offset the expected increase in the resource cost of freight and cost to government from establishing and implementing a safe rate of pay for owner and employee drivers?*

Other potential market responses such as mode shift of freight to rail, suppression of freight demand are discussed briefly, as are distributional and potential competition effects.

6.2 Identification of impacts on stakeholders

This section identifies the key stakeholders that would be materially impacted by the options. It also identifies the expected impacts.

The key stakeholders defined in this RIS are:

- truck drivers – including both owner-drivers and employee drivers
- the community – including the end consumer and other road users

⁴⁴ Effectiveness is broadly measured by the proportion of owner-drivers which would be covered by the new pay framework and the level of compliance by owner-drivers, i.e. the driver negotiates freight rates based on the minimum safe rate of pay rather than entering into some form of strategic behaviour to maximise their likelihood of winning work.

- supply chain intermediaries (other than truck drivers) – including the manufacturer, wholesaler, retailer, freight forwarder, freight business owner, warehouse operator, etc
- Government – largely responsible for establishing (or extending), operating, monitoring and enforcing new or existing heavy vehicle regulatory frameworks relating driver pay levels and/or conditions.

6.2.1 Option 1

Option 1 comprises the Base Case for this RIS. By definition, it is not expected to change the remuneration arrangements for either employee drivers or owner drivers.

Any ‘pay’ related improvements in road safety will only occur if increasing proportions of drivers (rather than numbers of drivers) receive remuneration and conditions outlined in the relevant legislation and guidelines.

However, there is significant uncertainty surrounding existing remuneration levels, particularly for owner-drivers. Moreover, estimating the change in the proportion of drivers which would be covered under the existing regulatory framework over time would also be subject to a high level of uncertainty. Therefore, this RIS assumes that Option 1 would have marginal incremental impacts.

6.2.2 Option 2

According to submissions made to the *Safe Rates, Safe Roads* Directions Paper, some owner drivers and smaller fleet operators are facing financial pressures due to power imbalances between themselves and the larger companies contracting for their services. These issues were raised in submissions responding to the Directions Paper. Another common theme to emerge was the lack of business skills and understanding of operational costing structures amongst this group.

The voluntary option would build on and enhance the status quo. It would involve implementing a suite of voluntary measures, using the current regulatory framework or establishing new legislation. This approach, with a package of voluntary measures, would attempt to address the imbalances encountered by owner drivers and small fleet operators such as information asymmetry and limited bargaining power, and through influencing driver behaviour also improve safety standards in the industry. A secondary likely outcome of this voluntary approach would be to address equity outcomes. For example, according to the Victorian Report of Inquiry into Owner Drivers and Forestry Contractors (2005), the Victorian owner driver system was expected to improve the bargaining position of owner drivers and potentially improve productivity across the industry.

The National Transport Commission has reported that operators who voluntarily manage their own risk have been found to reduce the number and lessen the severity of any crashes. The availability of additional information, including guideline rates, may also ensure that potential new owner drivers are fully informed and could prompt some to rethink entry into the industry and/or entering into an unfavourable financial position.

This approach could also address practices identified by industry as problematic and resulting in unsafe driving practices. These industry practices include non payment for waiting, loading and unloading, which may provide an incentive for truck drivers to speed or ignore fatigue rules to make up lost time. Remuneration related conditions, such as the requirement to pay for waiting, loading and unloading, could be established as part of a mandatory code of practice, for example, or within another regulatory framework. Any changes to current industry practices such as unpaid waiting time may also provide an important signal to transport companies and warehouse to increase efficiency by minimising waiting times (see Option 3 for further details).

The key expected impacts with Option 2 are summarised in Table 3.

Direct Benefits

On balance, it would appear that the main impact of the voluntary system for owner drivers would be to reduce the information asymmetry and address the asymmetrical bargaining position they face when negotiating with businesses. With the publication of guideline rates and prescriptions on certain kinds of conduct, owner drivers would be in a better position to negotiate better rates for jobs and conditions that do not require them to take excessive risks. Reduced levels of underpayment should reduce the incentive to undertake unsafe behaviours as a means to ‘make ends meet’ and thereby reduce the risk of a crash. Consequent benefits of this are the avoidance of death, injury or need for truck repairs.

Voluntary measures aimed at addressing information and bargaining asymmetries may lead to some safety improvements from businesses being less likely to set unreasonable conditions on owner drivers. However, the highly competitive nature of the transport industry and commercial pressures placed on drivers can be expected to limit compliance with voluntary measures such that the extent of safety improvement is uncertain and fatalities may not be reduced to the extent they would be with mandatory increases to owner driver rates and conditions (Option 3).

There is great uncertainty over the level of compliance with guideline rates and how much owner driver rates may increase above the base case, if at all. While Victoria and Western Australia have regulatory frameworks establishing voluntary measures and industry organisations have set up schemes in sectors of the industry, such as the Australian Logistics Council’s codes and the Australian Trucking Association’s voluntary accreditation systems, there is limited evidence to support voluntary approaches being effective. This suggests that compliance with guideline rates is likely to be very low.

Evidence from Victoria shows that heavy vehicle fatalities have reduced since the introduction of measures similar to the voluntary measures outlined above. However, it is not possible to attribute the safety improvements to the introduction of the measures, as improvements began before the measures were introduced and the level of compliance with guideline rates and other aspects of the measures are unknown.

Adding quasi regulation, in the form of a voluntary scheme, may have limited safety or economic impacts. According to stakeholders, only those industry participants already striving to meet a high business standard, such as the ‘big industry players’, may change behaviour in response to implementation of these voluntary measures. Small business operators, including owner drivers and small fleet owners, may find compliance difficult or costly, so not worth the effort. Compliance will be difficult, as the scheme is only voluntary and any sanctions incorporated may not deter non compliance.

There is also a risk that voluntary measures, including guideline rates, may be seen as an aspirational goal by industry participants, and not necessarily reflective of current or achievable practice for large sectors. Small business operators, including owner drivers and small fleet owners, may find compliance difficult or costly, so not worth the effort.

For Option 2, given the issues outlined above, the level of compliance with the guideline rate is assumed to be around ten per cent in the most likely scenario.

Based on an assumption that Option 2 will cover the entire owner driver sector, since additional information on costs faced by owner drivers and guideline rates will be of use to all owner drivers and not just those specifically covered by legislation, and that around ten per cent of owner drivers will increase their remuneration to a guideline rate (assumed to be the minimum wage), adoption of Option 2 may be expected to save some lives on Australian roads. This would result in some savings to Government from health service costs for people who are seriously injured in truck crashes, although these savings are not included in the scenario modelling. Further detail on this scenario modelling may be found in Appendix C.

Direct Costs

Costs to government would include implementation of the voluntary scheme, as well as the costs involved with providing dispute resolution processes, publishing guideline rates, industry targeted information and related education campaigns, and developing codes of practice and accreditation schemes.

Any increases in the cost of owner driver services are likely to be passed onto supply chain participants, including retailers, and then onto the consumers. For the purpose of this RIS, it is assumed that businesses contracting owner drivers will pass all costs onto supply chain participants and increases in costs will be passed onto subsequent supply chain participants, such that the increase in the cost of owner driver services will ultimately be met by consumers.

Overall Benefits/Costs

The above costs and benefits discussion suggests there will be direct benefits to drivers from increasing remuneration and improved safety outcomes. Direct benefits and costs will also be incurred by Government and the community (including consumers) from improved safety outcomes, increased costs for goods that have been transported by owner drivers and costs of establishing and maintaining the industry council. However, it is also important to consider the second round economic impacts of an increase in owner driver remuneration, including possible reductions (or increases) in demand for owner driver services, substitution with employee drivers or rail or sea transport and overall gain or loss of economic efficiency.

The overall costs (or benefits) to the economy will depend on the extent to which increases in owner driver remuneration eliminate (or create) economic inefficiencies caused by inefficient freight rates. This is determined by the starting position of owner driver remuneration relative to the efficient price, the elasticity of supply of owner driver services and the elasticity of demand for owner driver services.

The overall benefits and costs from gains or losses in economic efficiency and changes in demand for road transport services are expected to be very limited for Option 2, since compliance with the voluntary guideline rate is expected to be very low.

Since there are considerable barriers to exit from the owner driver industry, it is reasonable to assume that, at least in the short run, supply of owner driver services is highly inelastic. On this basis, increasing owner driver remuneration for a small proportion of drivers through a guideline rate will be a transfer from the community to owner drivers, up to the point where remuneration reaches the efficient price. It will not result in any improvements or reductions in economic efficiency unless the guideline rate is set at above the efficient price, in which case it will create costs for owner drivers and the community by introducing economic inefficiencies. The costs and benefits of the proposal, in the short run, would be represented by costs to Government, benefits from any improved safety outcomes and any economic efficiencies.

Over the medium-long term, however, supply of owner drivers is not inelastic since, as given enough time, people can raise enough funds to purchase a truck or negotiate the sale of a truck. If owner driver remuneration is assumed to be efficient (i.e. covers costs of labour and safety externalities), since owner drivers are accepting existing rates, then the adoption of a higher guideline rate by some owner drivers will create some loss of economic efficiency. This may be moderated depending on the price elasticity of demand for owner driver services and the extent to which businesses subcontracting to owner drivers can and are willing to substitute to employee drivers.

There are, however, reasonable grounds for assuming that owner driver remuneration is likely to be inefficient as it does not recover all costs, in particular, costs associated with safety externalities. In this case, where guideline rates result in an increase in owner driver remuneration, this may improve economic efficiency by correcting the distortion of the unpriced safety externality for the small proportion of drivers who receive an increase. The total economic costs or benefits of the proposal are determined by the balance between economic gains from moving from the existing rate up to the efficient price and losses from setting the guideline rate beyond the efficient price.

There is no evidence available to suggest what is the efficient price for owner driver services. Also, there is no information available on the medium-long term price elasticity of supply of owner driver services and only a limited amount of information on the price elasticity of demand for road transportation (but this is not limited to owner drivers, which would be more elastic because of the presence of a readily available substitute, being employee drivers). Therefore, while evidence on existing owner driver remuneration is available, we are not able to quantify the expected gains or losses in economic efficiency resulting from the introduction of Option 2.

The modelled scenarios therefore are based on the assumption that current rates are efficient and hence any move away from that efficient starting position represents a cost. This in fact is a major driver of the scenario results. While this is an initial starting assumption, further clarification on what actually constitutes an efficient base salary would improve the modelling results presented later in the RIS. An alternative modelling scenario for Options 2 and 3 where current remuneration rates are considered inefficient is presented for illustrative purposes in Appendix E.

If it is assumed that owner driver remuneration does not recover efficient costs and the efficient price for owner driver services is at least equal to the minimum wage, introducing a guideline rate at the minimum wage under Option 2 would be expected to result in some economic efficiency gains. However, these gains would be small because of the expected very low rate of compliance with the guideline rate. The gains would be shared between the community and owner drivers. Similarly, if current owner driver remuneration does recover efficient cost, economic efficiency losses arising from increases in owner driver remuneration would be shared between the community and owner drivers.

Employee drivers are a close substitute for owner drivers in a wide range of circumstances. However, with such low expected compliance with any guideline rate in Option 2 and compliance spread across the whole road transport industry (i.e. not limited to a particular segment), the impacts of Option 2 on relative prices between owner drivers and employee drivers and any substitution effects are likely to be insignificant. Since compliance with the guideline rate is not mandatory, it is likely that businesses that comply with the guideline rate will do so because they are willing to pay owner drivers the guideline rate rather than substitute to an employee driver. It can be reasonably assumed that businesses who would substitute at the guideline rate will simply not offer the guideline rate to owner drivers.

The voluntary measures are not expected to have any impact on competition. Owner drivers and businesses would be free to negotiate rates, despite the presence of a guideline rate. Owner drivers will still have significant scope to compete on price, including labour costs, and innovate and make efficiencies in their business.

Table 3: Incremental impacts of Option 2 by stakeholder

Impact type	Stakeholder			
	Truck drivers	Community	Broader supply chain operators (other than truck drivers)	Government
Financial costs and safety improvements	A small percentage of drivers who, along with their supply chain, comply with a guideline rate will receive an increase in remuneration. The financial situation of remaining owner drivers will not change as market failure issues regarding low bargaining power and incentives to undercut competitors to win work remain with a voluntary system. The small percentage of drivers who receive an increase in remuneration may share benefits from improved safety outcomes with the community.	The community will ultimately bear the small financial cost of increased prices for the goods transported by the small proportion of drivers who receive an increase in remuneration. The extent of this increase is highly sensitive to the assumed level of compliance with guidelines rates. The community may share safety benefits from the introduction of a guideline rate with a small percentage of owner drivers who receive an increase in remuneration.	Broader supply chain operators are unlikely to experience any net financial costs. Any increase in costs from operators up the supply chain will most likely be recovered from operators down the supply chain.	Government will incur incremental costs associated with the voluntary system including resourcing an industry council to develop, promote and disseminate guideline rates and other communications. The Government may also accrue some savings from health service costs because of fewer serious injuries resulting from truck crashes.
Economic costs/benefits	The small proportion of owner drivers who receive an increase in remuneration will share in small economic benefits or costs from the introduction of the guideline rate with the community. Remaining owner drivers will potentially continue to experience economic loss arising from remuneration that does not recover efficient cost and may be associated with a higher incidence of crashes.	The community may share with affected owner drivers some small economic benefits or costs from the introduction of a guideline rate that increases remuneration for some owner drivers. The community may also continue to bear the costs of a higher incidence of heavy vehicle crashes.	Broader supply chain operators will share in any economic benefits or costs from the introduction of a guideline rate that increases remuneration for some owner drivers. These benefits/costs will be in the form of increased/decreased demand for their products or services.	

6.2.3 Option 3

As previously described, this option involves the implementation of a national legislated system for employee and owner drivers, as well as the supply chain, with discretion to set mandatory rates of pay and pay related conditions for truck drivers. For example, pay rates and/or pay related conditions could be set by a tribunal for owner drivers in certain industry sectors where the tribunal is satisfied that the remuneration and remuneration related conditions are having a negative effect on safety outcomes. These rates of pay and/or pay related conditions would be used as a safety net during commercial contract negotiations. The tribunal would also have discretion to not set pay or pay related conditions for any truck drivers.

The impact of the introduction of a mandatory approach to setting rates and/or remuneration related conditions is uncertain, as the system will establish discretion over setting the rates and/or remuneration related conditions, as well as the quantum and/or parameters of any order or determination. In establishing mandatory rates and/or conditions the tribunal could be required to take into account a number of considerations including the likely impact on owner drivers and businesses in the supply chain, competition in the road transport industry, the special circumstances of rural, regional and other isolated areas, and the likely impact on the national economy.

The overall impact on owner drivers and the community is uncertain. As per Option 2, owner drivers covered by the legislation will benefit from increased remuneration and reductions in the costs of accidents. The community will also benefit from a reduction in the costs of accidents but will have to pay the costs of remuneration increases for owner drivers. While the overall costs and benefits to owner drivers will be the same as in Option 2, the extent of direct costs and benefits will be much greater for Option 3 because the mandatory option is expected to result in a remuneration increase for a much greater proportion of owner drivers. This will also increase the magnitude of second round economic effects, resulting in some substitution and competition effects. For Option 3, there may also be some efficiency gains from pay-related conditions that provide incentives for supply chain businesses to improve efficiency, such as mandatory remuneration for waiting and/or loading time.

If a tribunal chose to set a mandatory rate of remuneration for drivers in the road transport industry, or a particular segment of it, the magnitude of direct costs and benefits and second round economic costs and benefits arising from this decision will depend on the coverage of the legislation establishing the tribunal and the compliance of owner drivers and supply chain businesses with that rate.

For the purposes of scenario modelling in this RIS, coverage of the new owner driver legislation is assumed to be 60 per cent across the entire owner driver industry, with no variation in different segments of the industry. In practice, coverage is likely to differ by segment, for example it is expected that the legislation will achieve greater coverage of interstate long haul drivers than intrastate short haul drivers. However, 60 per cent coverage is assumed for consistency as there is limited evidence available that enables more precise estimation of coverage for the new legislation within the owner driver industry.

Again, for the purposes of scenario modelling this RIS, it is assumed that compliance with a mandatory rate of owner driver remuneration set by a tribunal is 90 per cent. Although the rate set by the tribunal will be mandatory for owner drivers and supply chain businesses, in practice achieving 100 per cent compliance may be difficult. Truck drivers are very mobile and will not necessarily have the documentation or records necessary to demonstrate compliance or take action up the supply chain to ensure payment of the safe rate. With only some sectors and some trips covered by the safe rate, industry participants and compliance officers may have difficulty confirming whether or not a mandatory rate set by the tribunal applies to their work.

It is possible that a tribunal may choose to set a mandatory rate of owner driver remuneration in particular segments of the road transport industry. In this RIS, three possible scenarios have been modelled. The direct benefits and costs for owner drivers and the community in each scenario will differ depending on the size of each segment, with larger segments resulting in greater direct costs and

benefits. Information on the number of owner drivers expected to be covered by a mandatory rate of owner driver remuneration in each segment are available in **Appendix C**.

The key expected impacts with Option 3 are summarised in Table 4.

Direct Benefits

Setting a safety-related remuneration rate and/or related remuneration related conditions for either the entire heavy vehicle sector or specific sub-sectors may improve safety outcomes in those sectors by reducing the incentive to speed, drive fatigued, use drugs, not maintain vehicles, or drive overloaded vehicles. It would therefore be reasonable to expect that improved safety outcomes would result in fewer road transport fatalities and injuries, which would lessen the impacts for the driver involved in any crashes, their families, the industry and the community. This would include the benefits of avoided property damage as modelled in the CBA. These improved safety outcomes would also result in savings to Government from health service costs for people who are seriously injured in truck crashes, although these savings are not included in the scenario modelling.

Direct Costs

Costs to government from Option 3 would include the establishment of a statutory body, such as a tribunal or industry body, or a non statutory body. The cost of the latter is likely to be less. This option will also include enforcement and compliance costs, which are likely to be similar for the tribunal or non-statutory body. This cost to Government is incurred regardless of any decisions that the tribunal may or may not make in future over setting mandatory rates of remuneration or conditions for owner drivers. If the tribunal, for example, does not set a mandatory minimum pay rate and/or pay related conditions for a particular industry sector, the cost to Government would remain, but the impacts would be low.

Where a pay rate and/or pay related condition is set, Option 3 is expected to lead to increased prices for goods in sectors of the industry. Businesses that contract owner drivers who are covered by a mandatory rate of remuneration may face increases in the costs of hiring owner drivers. These business would be expected to pass these costs on down the supply chain to non-transport businesses, including retailers, and finally to consumers.

For the purpose of this RIS, it is assumed that businesses contracting owner drivers will pass all costs onto supply chain participants and increases in costs will be passed onto subsequent supply chain participants, such that the increase in the cost of owner driver services will ultimately be met by consumers. As the increases in costs are expected to be spread widely, the increases are likely to be insignificant for individual consumers.

Overall Benefits/Costs

REMUNERATION RELATED CONDITIONS

The body established to investigate the link between remuneration and safety will have the discretion to set remuneration related conditions for sectors of the industry, which could be in place of or in addition to pay rates. These conditions could include the requirement to pay for any waiting, loading or unloading time, or to pay within a set period of time, such as 30 days.

According to NatRoad, the National Road Transport Operators Association, distribution centres regularly require drivers to wait up to ten hours before loading or unloading. Drivers are not paid for this waiting time and cannot claim the waiting time as an official rest break, which impacts on both income and fatigue management. Only a minority of operators are successful in negotiating payment for this waiting time. The loss of ten hours driving time is an incentive to make up for lost time, by driving additional hours, speeding or contravening mandatory fatigue management systems.

Any changes to these practices will provide an important signal to transport companies and warehouse to increase efficiency by minimising waiting times. Distribution centres, for example, would have a financial incentive to reduce waiting times, which would result in trucks being back on the road faster

and, possibly, being more productive. This approach would also result in the supply chain participant taking responsibility for payment in areas that they can directly impact.

There are no data available to indicate how many owner drivers are required to wait regularly, how often they are required to wait and how long they are required to wait for. However, if every hour of mandatory waiting time per driver (covered by and complying with the mandatory scheme) per working day was to be remunerated, this could result in an economic transfer to owner drivers of up to \$155 million.

As well as resulting in more efficient scheduling by supply chain participants, truck drivers may also have an incentive to become more efficient with the prospect of more efficient use of their time, including use of GPS or other electronic monitoring devices and better vehicle maintenance, so breakdowns are avoided.

Similar to Option 2, the above discussion highlights the possible costs and benefits from increasing remuneration, improved safety outcomes and costs to Government and the community (including consumers). There may also be second round economic impacts of an increase in owner driver remuneration.

Any tribunal decision to introduce mandatory rates and/or conditions may generate transfers between owner drivers, road transport supply chain participants and the community (consumers of goods transported by heavy vehicles). The overall costs (or benefits) to the economy will depend on the extent to which increases in owner driver remuneration eliminate (or create) economic inefficiencies caused by inefficient freight rates. This is determined by the starting position of owner driver remuneration relative to the efficient price, the elasticity of supply of owner driver services and the elasticity of demand for owner driver services.

The impacts discussed in Option 2 are the same for Option 3. However, the setting of mandatory rates of remuneration for owner drivers may be expected to result in much greater benefits or costs from improvements or reductions in economic efficiency because the proportion of owner drivers covered by a mandatory rate in Option 3 is expected to be much greater than the proportion of owner drivers who would comply with a guideline rate.

If existing levels of remuneration for owner drivers, either across the whole industry or in particular segments of the industry, do not recover efficient cost, setting a mandatory rate of remuneration for owner drivers up to the efficient cost may result in substantial gains from improvements in economic efficiency. However, if existing owner driver remuneration does recover efficient cost and a tribunal sets a mandatory rate of owner driver remuneration that is above the efficient cost, this may result in substantial losses from introducing economic inefficiencies. This illustrates the importance of the tribunal using a rigorous evidence based approach in considering appropriate rates of remuneration for individual industry sectors.

As mentioned earlier, the modelled scenarios are based on the assumption that current rates are efficient and hence any move away from that efficient starting position represents a cost. This in fact is a major driver of the scenario results. While this is a valid initial starting assumption from which to conduct the modelling, an important design feature of Option 3 is that the tribunal has discretion over setting rates and will only set a mandatory rate if it is clear that existing rates for owner drivers are below the efficient rate and unpriced safety externalities are part of the reason for this. This will minimise the risks of generating losses from introducing economic inefficiencies by the tribunal setting a mandatory rate. Further clarification on what actually constitutes an efficient base salary would improve the modelling results presented later in the RIS.

In considering costs and benefits of this approach, to achieve economic benefits from the proposal, much will depend on the ability of the body charged with setting the pay rates and/or pay related conditions to identify segments of the road transport industry where current owner driver remuneration does not recover efficient costs and unpriced safety externalities are part of the reason for this. As mentioned above, the tribunal has discretion over setting mandatory rates, including the rate set and segments of the road transport industry where a mandatory rate will apply. This design

feature enhances the likelihood of Option 3 introducing economic benefits by enabling the tribunal to set mandatory rates only where it is clear that existing owner driver rates do not recover efficient cost.

The costs and benefits from gains or losses of economic efficiency are highly sensitive to the number of people covered by a mandatory rate of owner driver remuneration and the rate set. The number of people covered by a mandatory rate will determine the extent of costs and benefits across owner drivers in the road transport industry and the community. For example, if a mandatory rate is set for short haul agriculture that is well above the efficient price, this will result in costs from increasing economic inefficiencies that will have a substantial impact on owner drivers in this segment of the industry and the parts of the community that consume these products. However, the overall economic impact will be small since short haul agriculture represents only a very small part of the road transport industry.

The ability to set rates of remuneration for particular segments of the road transport industry is crucial because efficient costs may differ by industry segment. If recovery of efficient cost is an issue in the short haul agriculture sector, setting a mandatory rate of remuneration across the whole industry may provide benefits through gains in economic efficiency in the short haul agriculture segment, but these benefits are likely to be outweighed by costs introduced from losses in economic efficiency in other segments of the road transport industry. Businesses in regional areas may be particularly affected because of the impact of safe rates on backhaul arrangements. In the current system, owner drivers will accept significantly lower rates on backhaul trips, given they are making that return trip anyway. The introduction of mandatory rates and/or conditions may mean that drivers could not carry loads on backhaul trips for rates below the 'safe rate'. This would increase costs for businesses in regional areas that provide goods to the larger markets. These impacts could be minimised if a reduced rate is established for backhaul trips.

In terms of impacts on competition, employee drivers are a close substitute for owner-drivers in a wide range of circumstances. With significant coverage and compliance possible from the setting of a mandatory rate, there may be some shift in relative prices between employee and owner drivers hence resulting in some shift in terms of competition between these groups. As can be reasonably expected, any shift in relative prices between two close substitutes will most likely lead to a substitution effect, with demand shifting toward the relatively cheaper substitute. The extent of any substitution effect will depend on the mandatory rate set by the tribunal. If the mandatory rate is set at lower than road transport award rates (i.e. at the minimum wage, as assumed in the modelled scenarios), owner drivers may still be cheaper than employee drivers in many circumstances and substitution between the two would be limited.

If rates for owner drivers set at a rate sufficient to make their services more expensive than employee drivers, there could be a shift in employment in the industry away from owner drivers and toward employee drivers. As part of this shift, some companies could move toward establishing their own fleets instead of contracting freight services. The Productivity Commission (2006) has estimated the own price elasticity of demand for road freight to be -0.431. That is, a 10 per cent increase in the price of road freight would be expected to lead to a reduction in demand of 4.3 per cent. However, this elasticity would be greater for owner drivers due to the presence of a readily available substitute.

While the bulk of any drop in demand for owner-driver services can be expected to reflect a shift toward the use of employee driver services, a smaller proportion will reflect a shift toward the use of rail freight services where these are potential competitors. A small proportion may also reflect an overall fall in the demand for freight services.

The introduction of a mandatory pay rate may address any issues associated with pressure exerted throughout the supply chain by large companies with commercial dominance, which leads to driver remuneration being driven down and the possibility of poor safety practices being adopted by drivers as a result. Despite this, the National Transport Commission Report concluded that the transport

industry will still be able to compete fairly following the setting of mandatory, minimum rates for owner drivers.⁴⁵ Owner drivers will still have strong incentives to compete with each other through savings on other components of their overall freight rate to win work.

⁴⁵ National Transport Commission 2008, *Safe Payments – Addressing the Underlying Causes of Unsafe Practices in the Road Transport Industry*, National Transport Commission, October 2008, Executive Summary, p2.

Table 4: Incremental impacts of Option 3 by stakeholder

Impact type	Stakeholder			
	Truck drivers	Community	Broader supply chain operators (other than truck drivers)	Government
Financial costs and safety improvements (note: costs and benefits are for the overall industry scenario)	<p>Owner drivers who are covered by a mandatory rate of remuneration and not already receiving that rate will receive an increase in remuneration. Some drivers will not be covered by the legislation. For those who are covered, any mandatory rate may apply to owner drivers across the road transport industry or only in particular segments of it. Drivers who receive an increase in remuneration may share a small amount of benefits from any improved safety outcomes with the community.</p>	<p>The community will ultimately bear the financial cost of increased prices for goods transported by owner drivers. The extent of this increase is highly sensitive to the assumed coverage of the legislation, the proportion of the road transport industry covered by a mandatory rate and the rate itself. The community may share safety benefits along with a relatively small number of owner drivers who receive an increase in remuneration.</p>	<p>Broader supply chain operators are unlikely to experience any net financial costs from Option 3. Any increase in costs from operators up the supply chain will most likely be recovered from operators down the supply chain.</p>	<p>Government will bear additional costs of establishing and administering the proposed tribunal compared to the status quo, including the monitoring the industry is complying the safe rates. The Government may also accrue some savings from health service costs because of fewer serious injuries resulting from truck crashes.</p>
Economic costs/benefits	<p>Owner drivers who receive an increase in remuneration from a mandatory rate of remuneration will share in any economic benefits or costs from the introduction of the mandatory rate.</p> <p>For some drivers, the choice of operating structure may change if industry substitutes towards employee driver services. Demand and hence revenues may fall as the market adjusts to reduce uneconomic freight flows (suppressing demand) and the potential for mode shift of existing road freight.</p>	<p>The community will share with affected owner drivers the economic benefits or costs from the introduction of a mandatory rate of remuneration that increases remuneration for some owner drivers, including benefits that may be accrued from efficiency gains made from reducing waiting times. Community will also benefit where resources invested in the transport sector either attract an efficient return improving productivity or are ultimately redeployed into other sectors.</p>	<p>Broader supply chain operators in industries where a mandatory rate of remuneration is set and which use drivers covered by the legislation will share in any economic benefits or costs. These benefits/costs will be in the form of increased/decreased demand for their products or services.</p>	

6.3 Cost benefit analysis

This section summarises the key direct costs and benefits for the community anticipated under the key options, that is:

- Option 1 – status quo (base case)
- Option 2 – voluntary approach
- Option 3 – mandatory safe rates

The detail behind the scenarios can be found at **Appendix A** which conceptually describes and highlights the key parameters which were used to monetise the costs and benefits. The CBA only captures the direct costs and benefits of the stakeholders – truck drivers, community, broader supply chain operators (excluding the truck drivers) and government. In practice, the direct costs and benefits will induce second round or ‘transmitted’ impacts but those impacts are not captured in this analysis as they are uncertain and difficult to measure.

As noted previously, the four road transport scenarios used in this section have been developed to illustrate the possible impacts of potential decisions made by the tribunal.

The key data and assumptions that were used to estimate the costs and benefits identified under the various scenarios can be found in **Appendix C**. The method with which the data was combined to estimate the costs and benefits for the purposes of CBA is described below.

Approach

The economic appraisal framework in this RIS is based on a multi-modal CBA methodology. Like all CBA frameworks, the approach requires the appraisal of projects on an incremental basis (i.e. comparing the options to the Base Case or ‘without option’ case).

The direct regulatory costs with each option were provided by DEEWR and streamed accordingly.

The safety benefits are estimated by quantifying the reduction in the number of Base Case incidents by scenario using the elasticities and associated assumptions discussed in **Appendix C**. The extent of crash reduction is based on the implied percentage change in remuneration with the options compared with the current average remuneration experienced by underpaid owner drivers and employees by scenario, although it must be stressed these are assumed inputs for the purposes of modelling the agreed scenarios. The incremental change in crash by type by year is then monetised by applying the relevant VoSL (Value of Statistical Life), VSI (Value of Statistical Injury) and property damage values.

In an economic (rather than a financial) CBA, movement towards an efficient level of remuneration would comprise a benefit rather than a cost. However, demonstrating such a benefit requires estimation of an efficient rate of remuneration. This is beyond the scope of the RIS. However, scenario analysis contained in Appendix E identifies the impacts of assuming that the (national) minimum wage approximates an efficient level of remuneration.

The final direct cost in the RIS is the annual increase in remuneration enjoyed by underpaid owner drivers. This is simply calculated as the difference between the Base Case average remuneration for underpaid drivers and the proposed remuneration with the options. The key difference between the options is that the voluntary and mandatory options have different levels of assumed compliance and hence, all other things being equal, the incremental remuneration cost with the mandatory option will be higher.

General assumptions

The general appraisal assumptions used in this CBA are as follows:

- cash flows are expressed for financial years ending June
- cash flows are included in the period in which they occur
- the Base Year of the appraisal is 2011/12
- prices are expressed in 2011/12 dollars, unless otherwise stated
- the evaluation period for all options is 10 years, beginning from the Base Year
- future net benefits are discounted to the base year (2011/12) using the endorsed real discount rate of 7 per cent.

Measures of economic performance

This CBA provides the following measures of economic performance:

- Net Present Value (NPV) – the difference between the present value (PV) of total incremental benefits and the PV of the total incremental costs
- Benefit Cost Ratio (BCR): ratio of the PV total incremental benefits net of PV of total incremental PV of capital costs.

Scenarios that yield a positive NPV imply that the incremental benefits of the option exceed the incremental costs over the evaluation period. Finally, a BCR greater than one indicates that option benefits exceed regulatory and remuneration costs.

6.3.1 Results

The results of the CBA measure the net direct benefits for the community with each option compared with the Base Case. The options are assessed across the national heavy vehicle sector as a whole for Option 2, i.e. across all owner drivers in Australia, while a disaggregation by sector is provided for Option 3.

It should be noted that the expected safety benefits would be shared between the community and owner drivers. The proportion of safety benefits that would be accrued by the community and the proportion accrued by owner drivers are not able to be distinguished from the available data. Therefore, for the purpose of this CBA analysis, all safety benefits are assumed to be accrued by the community.

Based on conventional economic measures and the assumptions used in this RIS, both options generate a BCR below one and a negative NPV. That is, the additional costs associated with increased remuneration exceed the additional road safety benefits expected.

However, the results are highly sensitive to the assumptions adopted and they should be considered in the context of the following issues:

- This RIS uses a wide range of assumptions which would, in effect, comprise the outcomes of a research agenda for a proposed remuneration body such as a tribunal. The results in the RIS indicate that there are strong grounds to at least establish a remuneration body to investigate pay/condition issues in the road freight sector. For example, the incremental regulatory costs of Option 3 are \$5.0 million per year to fund the establishment and operation of a remuneration body. This translates into a total cost over the ten year evaluation period of PV\$32.6m (Appendix D). Comparing this to the safety benefits of approximately PV\$56.6m

for the voluntary option alone (Appendix D) indicates that there are strong grounds for establishing a remuneration body to investigate and develop the evidence base required to address the data issues identified in this RIS. Further economic analysis would be needed to assess whether any recommended changes in rates are desirable.

- The road safety benefits assessed in this RIS are also considered very conservative based on the assumptions used. The road safety elasticities used in this RIS are sourced from a limited number of international studies. Further empirical work is required to validate these results for the Australian case. It may be the case that the elasticities would differ by road freight segment, resulting in a higher weighted elasticity across the industry. Moreover, the incremental safety benefits are net of the savings expected from non-remuneration related safety programs currently in place (see discussion below). The possible uplift in road safety associated with adding remuneration related safety programs to the current suite of approaches has not been investigated. While the RIS assumes that there will be different levels of risk in each segment (proxied by the number of crashes), it assumes that drivers' risk profiles do not vary across segment. This is a simplifying assumption given incomplete and uncertain data.
- Notwithstanding the elasticity levels, the results of the RIS shows that there are diminishing marginal safety benefits associated with increases in remuneration. The potential maximum safety benefits are determined by the net avoidable crashes after the effectiveness of alternative safety programs are taken into account. This RIS assumes and segments the number of crashes on the network and forecasts these based on the expected effectiveness of a range of other heavy vehicle safety programs. This results in a significant decline in road crashes over time on an already (relatively) low number of fatalities. The RIS then assumes that the avoidable crashes are restricted to 25 per cent over the entire ten year period to ensure that only those crashes which are based on driver fault and antecedents of pay related crash causes are captured. Therefore, while the incremental costs of remuneration increase significantly at higher compliance rates, there is not a commensurate increase in crashes avoided.
- The key cost in this RIS is incremental remuneration. This in turn is dependent upon the assumed remuneration profile across owner drivers and hence, the proportion which is defined as 'underpaid'. Significant further research is required to validate these data as the difference between the average weighted remuneration for 'underpaid' drivers and the proposed remuneration with the options is the key determinant of incremental option cost. Further research may indicate that the weighted average current remuneration and hence, the proportion of underpaid drivers is different to that identified in the assumptions and is likely to vary by road freight sector. The key difference between the options is the assumed level of compliance, i.e. the higher the level of compliance, the higher the incremental remuneration costs, given the assumed proportions of 'underpaid' owner-drivers. Therefore, marginal changes in the proportion of 'underpaid' owner drivers will have a significant impact on the results of this RIS, and
- The RIS also does not comment on whether observed remuneration is economically efficient. Given the establishment of market failures such as information asymmetry or barriers to exit, from an economic rather than financial perspective, increase in remuneration towards an efficient level would actually comprise a societal benefit rather than a cost. Again, the establishment of an efficient level of remuneration is a task that would be undertaken by the remuneration body. Further investigation may indicate that existing remuneration levels are not recovering efficient labour costs, in which case a proportion of the incremental costs identified in this RIS would be re-defined as an economic benefit and would significantly change the economic results.

Table 5: CBA model results - Central estimates

	Option 2 – voluntary 10% compliance rate		Option 3 – 60% coverage and 90% compliance rates	
	BCR	NPV	BCR	NPV
Overall sector				
	0.49	-\$44.4m	0.51	-\$228.4m
Specific sector				
Long Haul			0.30	-\$199.2
Agriculture			0.89	-\$1.9m
Quarry			0.29	-\$51.1m

6.4 Sensitivity analysis

A range of sensitivity analyses were undertaken on the central case results above, including the variation of the:

- elasticity of crash rates in response to changes in remuneration
- remuneration rate
- compliance rates
- coverage (Option 3 only), and
- value of statistical life.

Elasticity of crash rates in response to changes in remuneration

Sensitivity analysis using alternative elasticity of crash rates is presented in Table 6 below where the central case elasticity is changed to -1.5 and -2.5 rather than -2.0 in the modelled case.

Table 6: Comparison of options - change in elasticity

Elasticity	Option 2 – voluntary 10% compliance rate		Option 3 – 60% coverage and 90% compliance rates	
	BCR	NPV	BCR	NPV
-1.5	0.37	-\$55.2m	0.38	-\$286.9m
-2.0 (Modelled case)	0.49	\$44.4m	0.51	-\$228.4m
-2.5	0.62	-\$33.6m	0.55	\$209.7m

The results in the table above indicate (as expected) that the economic viability of the options increase with a higher crash elasticity of -2.5. However, for both options the costs still significantly outweigh the benefits. The interesting outcome of this sensitivity test is that changes in elasticity have a greater impact on the net benefits at lower compliance rates. This is expected given that if close to 100 per cent of drivers receive a change in remuneration, the incremental increase in remuneration is such that the 25 per cent cap of remuneration related avoidable crashes is reached. This is a key finding as it sets a limit as to the marginal benefit of pursuing safety outcomes using remuneration. Obviously, this trade-off is based on a number of assumptions made in this RIS and which would need to be validated by the Tribunal.

Further sensitivity tests were conducted to examine the value of elasticity in order to achieve a BCR of one while the other components are held constant in the model.

In Option 2, the BCR will reach one when the elasticity is equal to -4.23, i.e. each ten per cent increase in remuneration will result in a 42.3 per cent reduction of crashes. Considering that this value substantially exceeds the elasticity expectations concluded from the literature, it implies that a change in elasticity is unlikely to make Option 2 economically viable unless other conditions of the model are altered.

In Option 3, the solution does not exist. In other words, the model indicates that the BCR is unable to achieve one regardless of the value of elasticity as the cost to society always outweighs the benefits of reduced crash costs.

Safe rates

Table 7 below shows the results of the sensitivity analysis where remuneration rates are altered. The results in the table above indicate that the economic viability of the options decrease with higher levels of remuneration.

Table 7: Comparison of options - change in remuneration rate

<i>Safe Rates</i>	Option 2 – voluntary 10% compliance rate		Option 3 – 60% coverage and 90% compliance rates	
	BCR	NPV	BCR	NPV
\$15.51 Modelled case / National minimum wage	0.49	-\$44.4m	0.51	-\$228.4m
\$16.51 ⁴⁶ Transport Industry Council Rates and Costs Schedule 2010 - Semi-Trailer (Bogie Drive, 6-axle) ⁽¹⁾	0.51	-\$57.7m	0.41	-\$366.7m
\$26.35 ⁴⁷ the Road Transport (Long Distance Operations) Award 2010 – Grade 4 ⁽²⁾	0.53	-\$188.0m	0.12	-\$1,911.9m

Note (1): The hourly rate is evaluated based on total hours up to 8 hours a day, 1,840 hours a year.

Note (2): The minimum hourly driving rate is calculated by dividing the minimum weekly rate (\$675.60) by 40, and multiplying by 1.3 (industry disability allowance) and 1.2 (overtime allowance).

Compliance rates

⁴⁶ Workforce Victoria 2011, Transport Industry Council Rates and Costs Schedule 2010 - Semi-Trailer (Bogie Drive, 6-axle) (p. 8) http://www.business.vic.gov.au/busvicwr/_assets/main/lib60070/diird%20615%20-%20od%20rc%20transport%20semi-trailer%20update.pdf

⁴⁷ Fair Work Australia 2011, Road Transport (Long Distance Operations) Award 2010 – 21 June 2011 edition (p. 17) http://www.fwa.gov.au/documents/modern_awards/pdf/MA000039.pdf

Table 8 below shows the results of the sensitivity analysis where compliance rates are altered.

Table 8: Comparison of options – change in compliance rates

<i>Compliance rates</i>	Option 2 – voluntary option (Modelled case = 10%)		Option 3 – 60% coverage (Modelled case = 90%)	
	BCR	NPV	BCR	NPV
10%	0.49	\$44.4m	0.32	-\$54.3m
50%	0.53	-\$189.5m	0.48	-\$141.4m
90%	0.35	-\$471.8m	0.51	-\$228.4m

Again, the table above indicates that the incremental remuneration costs are directly linked to the level of compliance. The Option 3 scenarios with a higher compliance rate demonstrate a higher net cost to society.

Coverage rate

Table 9 below shows the results of the sensitivity analysis where coverage is altered.

Table 9: Comparison of options – change in coverage

<i>Coverage</i>	Option 3 –90% compliance rates	
	BCR	NPV
40%	0.49	-\$163.1m
60% (Modelled case)	0.51	-\$228.4m
80%	0.42	-\$353.0m

Similar to the sensitivity test on compliance rates, the result indicates that the incremental remuneration costs are directly linked to the level of compliance. The Option 3 scenarios with a higher compliance rate demonstrate a higher net cost.

Value of serious injury

Table 10 demonstrates the results of altering the VoSI used in this analysis.

Table 10: Comparison of options - change in VoSI

<i>VoSI</i>	Option 2 – voluntary 10% compliance rate		Option 3 – 60% coverage and 90% compliance rates	
	BCR	NPV	BCR	NPV
(\$26,000) 14.9% of VSLY	0.37	-\$55.4m	0.38	-\$288.0m
\$396,222 (Modelled case)	0.49	-\$44.4m	0.51	-\$228.4m
\$792,444 (100% higher than central case)	0.63	-\$32.6m	0.64	-\$164.7m

The results in the table indicate that the viability of the options improve by adopting higher estimates of VoSI. However, the costs still outweigh the benefits for all options.

7 Consultation Statement

The Safe Rates Advisory Group (SRAG) was formed to provide expert industry advice to the department. The SRAG assisted with developing the options canvassed in the Safe Rates, Safe Roads Directions Paper (the Directions Paper). The Group was established by the Australian Government in late 2009 and included employee, employer and industry representatives, along with safety and regulation experts. SRAG recommended a tribunal approach to addressing remuneration related safety issues by setting pay rates and/or pay related conditions.

The Department received submissions from 45 parties in response to the Directions Paper. Of these submissions, 21 supported the mandatory option. 14 submissions did not support any of the options put forth in the Directions Paper and preferred a 'status quo' approach. The remaining ten submissions supported a voluntary model.

There was strong support for implementation of the mandatory approach from unions, individual drivers, and driver groups, including the Australian Council of Trade Unions (ACTU), the Transport Workers Union (TWU), the Australia Road Transport Industry Organisation (ARTIO), the Australian Long Distance Owner Drivers Association (ALDODA), Transport Forum WA (TFWA), the Victorian Transport Association (VTA), Unions NSW (UNSW), and the Owner Drivers Association of SA (ODASA).

Large employers/fleet operators that made submissions, including TOLL Group, Ron Finemore Pty Ltd and Woolworths Ltd, argued that any measures introduced should be voluntary. In general, industry groups and employer representatives, such as the Australian Chamber of Commerce and Industry (ACCI), the Australian Trucking Association (ATA) and the South Australian Road Transport Association (SARTA), did not support any of the options outlined in the Paper, advocating for a 'status quo' approach, with suggestions for various improvements of current regulation via harmonisation and enforcement. The Australian Industry Group's (AIG) and the Australian Logistics Council (ALC) submissions supported the introduction of voluntary measures, while the Australian Livestock Transporters Association's (ALTA) submission expressed support for a mandatory option in general.

Linfox did not make a submission during the consultation period but expressed its support for submissions made by the national and NSW branch of the ARTIO, which argued that there is a need for substantial policy reform in the area of remuneration systems in the road transport industry.

If a decision to set mandatory rates was taken, the South Australian Freight Council advocated for a specialist transport tribunal and Woolworths Limited and the ARTIO supported a Safe Rates Panel in Fair Work Australia. ACCI indicated that consideration should be given to the establishment of an independent body outside the FW Act that only deals with owner drivers and which is limited to the heavy vehicle transport industry. The National Road Transport Operators Association (NATROADS) supported a tribunal limited to pay and conditions matters and the Cement Concrete Aggregates Australia supported a tribunal without dispute resolution powers.

The state government submissions provided a range of views. The then NSW Government supported a mandatory option and the WA Government supported a voluntary approach. The South Australian Government, represented by SafeWork SA (which consulted the Department of Transport, Energy and Infrastructure) supported the mandatory option, stating that regulation has the potential to create a more sustainable and attractive industry, with greater certainty and productivity for clients. The Queensland Government advised that it withheld support for any changes until a thorough economic analysis had been performed and their submission recommended consideration of voluntary options for improving road safety.

Regarding the implementation of mandatory rates of pay for the road transport industry, the concerns most commonly raised in submissions included:

- the uncertain nature of the link between remuneration and safety outcomes
- the potential for a negative impact on the industry and flow-on effects on the economy
- the difficulty of setting and enforcing mandatory rates.

It should be noted that the tribunal model set out in the Directions Paper has been modified, with the tribunal now to have discretion regarding whether or not to set a rate. Before making an order, the tribunal will have to consider impacts on the industry and economy, as well as rural and regional areas.

The establishment of a tribunal could include implementing a research secretariat, which would be adequately resourced to ensure that informed decisions are made. A compliance agency, such as the Fair Work Ombudsman (FWO), would be suitably resourced to monitor and enforce compliance with any orders of the tribunal. This could be done in a similar manner to the FWO's current activities which include investigating specific complaints, as well as education campaigns and publications.

8 Implementation

Responsibility for the individual measures underpinning the implementation and review of the Road Safety Remuneration System will rest with the relevant portfolio Minister, noting that the Minister for Jobs and Workplace Relations has had overarching responsibility for this initiative since inception and is best placed to maintain overall oversight.

The Minister will establish a high level steering group to establish the Road Safety Remuneration System. This steering group consists of members from relevant agencies including the Department of Education, Employment and Workplace Relations, the Department of Infrastructure and Transport and the Department of Innovation, Industry, Science and Research, in addition to members from Fair Work Australia (FWA) and the Fair Work Ombudsman (FWO).

To meet the Government's commitment to consult throughout the implementation process with stakeholders, the Safe Rates Advisory Group has been re-established by the Minister. The aim of this advisory group is to draw together industry experts, to provide advice on legislation and various implementation issues as they arise.

A tribunal will be established, to have discretion to establish and maintain enforceable orders for employee drivers and owner drivers in sectors of the industry. Members of the tribunal will be drawn from FWA and the Road Transport Industry.

The tribunal will be supported by a research secretariat within the existing FWA infrastructure, which will carry out or procure further empirical research into links between remuneration and safety in the road transport industry. The tribunal, with the support of the secretariat, may also undertake a number of other related projects, including development of guideline remuneration rates or model contracts for owner drivers, which can be used for educational purposes.

The separate education and compliance function will be performed by the FWO, alongside its existing statutory responsibilities under the Fair Work Act 2009. The FWO will be responsible for communicating information about the Road Safety Remuneration System and where necessary enforce any orders made by the tribunal.

Evaluation of the Road Safety Remuneration System will be an important aspect of the overall project. The Evaluation process will be two-fold, including the on-going evaluation of the implementation process by the Steering Committee at key milestones and evaluation by Government and the Parliament, using annual and other reports provided by agencies responsible for the Road Safety Remuneration System. The Government will also be able to initiate a review, which would include a comprehensive analysis of the Road Safety Remuneration System, how it is operating and its impact on employers, employees, contractors, the road transport industry, the economy, the community and governments.

9 Conclusion

The options considered in this RIS relate to the Government's response to the 2008 National Transport Commission Report, *Safe Payments: Addressing the underlying causes of unsafe practices in the road transport industry* (the NTC Report).⁴⁸ The background to this report is that while heavy vehicle transport safety outcomes have improved in recent years, particularly given the growth in population and freight task, there are still a high number of truck crashes resulting in fatalities and serious injuries – which include the general public.

This RIS has examined the potential impacts associated with three options:

1. maintaining the existing federal and state-based legislation for employee drivers and owner drivers (where applicable) - this option is the base case for this RIS
2. introducing a voluntary system of payments for owner drivers and chain of responsibility arrangements
3. establishing the tribunal, with discretion to set and maintain remuneration rates and/or remuneration related conditions for employees, owner drivers and the supply chain, if safety outcomes would improve as a result of the decision.

The overall impact on owner-drivers and the community of both option 2 and option 3 is uncertain. With Option 2, owner drivers covered by the legislation may benefit from increased remuneration and reductions in accidents. The community may also benefit from a reduction in accidents but may have to pay a share of the costs of remuneration increases for owner drivers. However, compliance with the guideline rates would be voluntary, so that the level of take up could vary substantially.

Under Option 3, if a tribunal chose to set a mandatory rate of remuneration for drivers in the road transport industry, or a particular segment of it, the magnitude of direct costs and benefits and second round economic costs and benefits arising from this decision would depend on the coverage of the legislation establishing the tribunal, the scope of the order and the compliance of owner drivers and supply chain businesses with that rate.

In Option 3, while the direct costs and benefits to owner drivers and the community may be the same as for Option 2, the extent of these direct costs and benefits could potentially be much greater if the tribunal sets a remuneration rate because the mandatory option is expected to result in a remuneration increase for a much greater proportion of owner drivers and corresponding greater road safety improvements.

This RIS has attempted to model a range of scenarios to illustrate the potential direct costs and benefits of different actions by the tribunal. The CBA results need to be treated with caution due to a wide range of assumptions in the face of incomplete and uncertain data. The scenario modelling results are purely illustrative and are highly sensitive to the assumptions adopted. The modelled scenarios are based on the assumption that current remuneration rates are efficient and hence any move above that efficient starting position represents a cost. This in fact is a major driver of the scenario results. Based on the findings of the NTC report and stakeholder submissions, however, there appear to be reasonable grounds for assuming that owner driver remuneration may be inefficient and not recover all costs, particularly those associated with safety externalities. This is due to the possible existence of the market failures described earlier.

⁴⁸ <http://www.ntc.gov.au/filemedia/Reports/SafePaymentsFinalReportNov08.pdf>

Conclusion

The indicative CBA results indicate that the direct costs outweigh the direct benefits for Option 2 (voluntary system) and Option 3 (mandatory system). However, this does not take into account the potential economic benefits of addressing any current market failures. Option 3 is recommended over Option 2 because establishing a tribunal to address the link between remuneration rates and safety can more effectively address current unacceptable levels of safety and potential market failures.

Appendices

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Appendix A Road Transport Scenarios

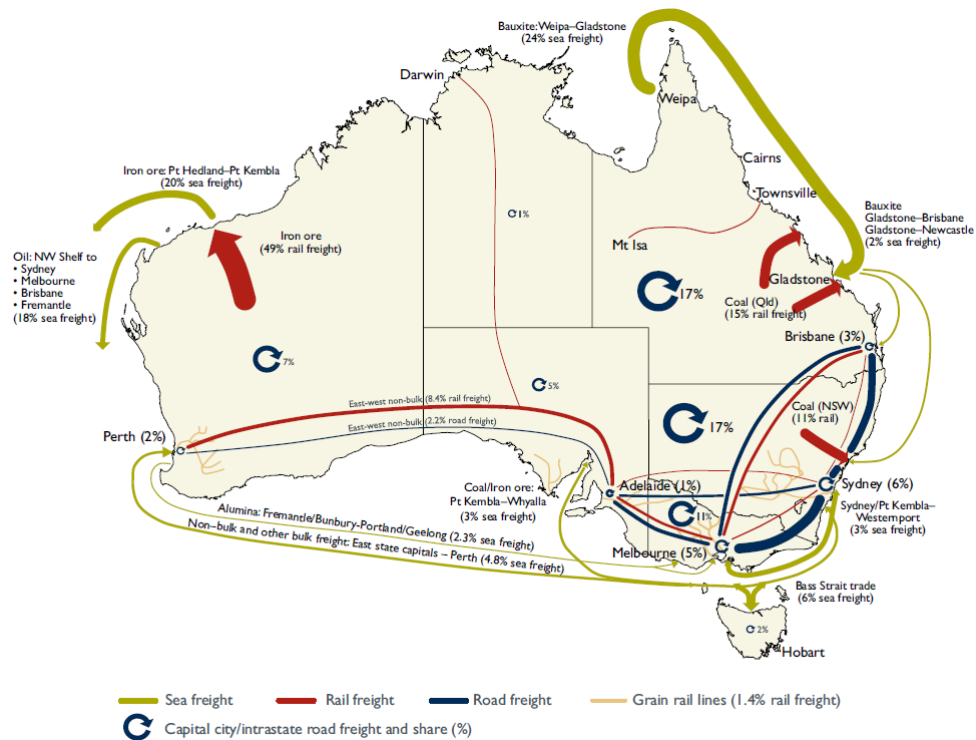
As mentioned in the body of the report, the road transport scenarios analysed in this RIS are defined in terms of the key market segments. These segments are in turn defined by the major parameters which will comprise the cost benefit analysis.

Long haul road freight

Half of the road freight in Australia (tonne kilometre) is classified as ‘long distance’ freight. In general, long distance freight is classified as that which has an average trip length of 300-500 km^{49,50}. This segment of the market is expected to account for 60 per cent of road freight by 2030.⁵¹ As such, most of the interstate and part of the intra-state freight task falls within this category.

The key long distance freight routes are identified below in Figure 4.

Figure 4: Long distance transport freight routes



Source: BITRE 2009, Road and rail freight: competitors or complements?, Information Sheet 34, http://www.bitre.gov.au/publications/23/Files/IS34_RoadRailFreight.pdf.

This figure shows the key long distance freight routes across Australia.

⁴⁹ Australian Transport Safety Bureau 2001, *Driver fatigue: A survey of long distance transport companies in Australia*, Information Paper CR/198, ATSB.

⁵⁰ ARTIO and Queensland Truck Association 2011, *Response to Safe Rates, Safe Road Directions Paper*, 11th February 2011, <http://www.qta.com.au/pdf/2011/Safe%20Rates%20Safe%20Roads%20Submission%20by%20ARTIO%20Qld%20&%20QTA%20Ltd.pdf>.

⁵¹ BITRE 2011, *Road Freight Estimates and Forecasts in Australia: Interstate, Capital Cities and Rest of State*, Research Report 121, http://www.bitre.gov.au/publications/74/Files/Report_121.pdf.

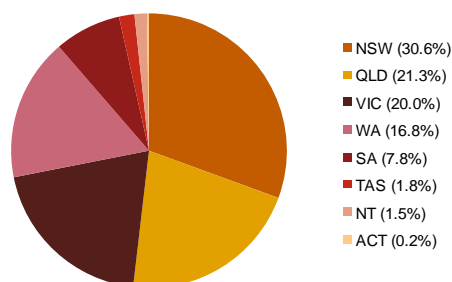
In contrast to the mix of customer types in the short distance freight market, the long distance market mainly comprises larger business and wholesale customers. It is common practice in the long distance sector for transport companies to provide a fixed freight rate quotes. The price generally reflects best practice in terms of estimates for loading and unloading times and suitable time slot arrangements.

Table 11 below presents key descriptive statistics for the long distance road transport market.

Table 11: Long haul freight market descriptive statistics

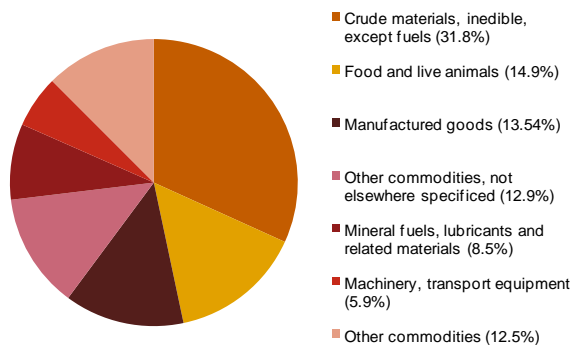
Indicator	Description
Freight task volume	Approximately 151.8 billion TKM in 2010 ⁵² .

Proportion by jurisdictions, by TKM



Source: ABS 2010, *Survey of motor vehicle use*, cat no. 9208.0.
Note: Total freight TKM including short distance trips.
 This figure shows the proportion of long haul freight by TKM per jurisdiction (New South Wales, Queensland, Victoria, Western Australia, South Australia, Tasmania, Northern Territory and Australian Capital Territory).

Key commodities by tonnes carried



Source: ABS 2010, *Survey of motor vehicle use*, cat no. 9208.0.
Note: Total freight TKM including short distance trips.
 This figure shows the proportion of key commodities (crude materials, inedible, except fuels; food and live animals; manufactured goods; other commodities, not elsewhere specified; mineral fuels, lubricants and related materials; machinery, transport equipment; and other commodities) of long haul freight by tonnes carried.

⁵² BITRE 2011. Road freight estimates and forecasts in Australia: interstate, capital cities and rest of state

Indicator	Description
Remuneration level and structure	<p>The drivers are generally awarded on performance-based payment systems:⁵³</p> <ul style="list-style-type: none"> • most long distance employee drivers operate articulated vehicles and are paid a cents per kilometre (CPK) rate under the Road Transport (Long Distance Operations) Award 2010; and • owner-drivers are paid by a variety of mechanisms (including per load, weight, volume or distance) but are most commonly paid a CPK or load rate.

Short haul quarried

The quarrying industry in Australia is expected to generate revenue of about \$9 billion in 2010/11⁵⁴. Road is the primary mode for moving product between rock quarries, sand and gravel extraction sites, cement production and distribution facilities and concrete batching plants throughout the nation.

Table below presents key descriptive statistics for the short haul quarried products market.

Table 12: Short haul quarried descriptive statistics

Indicator	Description
Estimated proportion of owner drivers	No detailed information – but mainly short haul operations and mixture of owner-drivers and employee drivers ⁵⁵
Freight task volume	The industry produces 8.9 million tonnes of cement and 23.9 million m ³ of pre-mixed concrete per annum, ⁵⁶ transport by approximately 12,000 heavy vehicles across the nation

⁵³ NATRoad 2011. Natroad response to the 'Safe rates, safe roads' direction paper

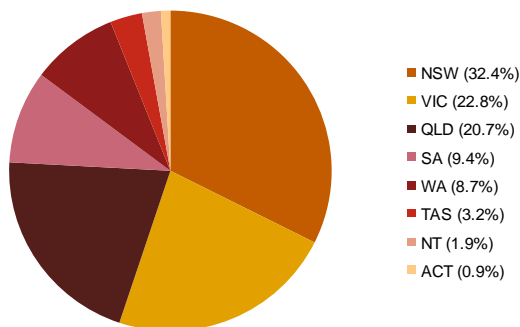
⁵⁴ IBIS World 2011, *Concrete slurry manufacturing in Australia, Industry Report C2633; Concrete and line manufacturing in Australia, Industry report C2631; and Gravel and sand quarrying in Australia, Industry report B1411*

⁵⁵ Cement Concrete & Aggregates Australia 2011. CCAA submission – Safe Rates, Safe Roads

⁵⁶ Cement Concrete & Aggregates Australia 2011. CCAA submission – Safe Rates, Safe Roads

Indicator **Description**

Proportion by jurisdictions



Source: IBIS World 2011
 This figure shows the proportion of revenue per jurisdiction (New South Wales, Queensland, Victoria, Western Australia, South Australia, Tasmania, Northern Territory and Australian Capital Territory).

Estimates based on the revenue distribution of a) concrete slurry manufacturing, b) cement and lime manufacturing and c) gravel and sand quarrying Industry report.

Key commodities by tonnes carried The key material and products include: stone, limestone, gravel and sand used to product building and construction materials such as cement, concrete, bricks, tiles, pavers and roads paving.

Key vehicle types In general, loose material is mainly transported by dump trucks which are classified as articulated trucks

Remuneration level and structure No details are available

Short haul agriculture

The transport and logistics sector plays an important role in Australia’s agricultural sector. For instance, the road transport is largely used to transport livestock between farms and stations, as well as transport to and from saleyards, feedlots, processing establishments and live export ports across the country. The former generally refers to the short haulage transport where most of the origins and destinations are located within the same region.

In the broader agricultural sector, the key sub-groups of commodities are a) crops, b) livestock and other; and c) livestock products. This sector accounts for approximately 15 per cent of total road freight volume (tkm).⁵⁷

Data suggests that the agricultural sector is comprised of shorter distance freight tasks compared to other segments of the road transport market, on average. Moreover, the agricultural sector accounts for approximately 50 per cent of heavy vehicles but contributed only 15 per cent of total network tonne volumes. Australia Livestock Transporters Association (ALTA) cited that:

⁵⁷ ABS 2007, Survey of motor vehicle use, cat no. 9208.0

“approximately 50% of all registered heavy vehicles in Australia are held by farmers, and businesses classified as being in ‘agricultural, forestry, fishing and hunting’ comprise more than 50% of all enterprises that operate heavy vehicles in Australia”⁵⁸

Table 6 below presents the key descriptive statistics for the short haul agricultural transport market.

Table 6: Short haul agricultural freight market descriptive statistics

Indicator	Description
Estimated proportion/number of owner drivers	Industry estimates indicate that this sector is dominated by the owner-operator as 86 per cent of ALTA’s members indicate that they operate five or fewer trucks and a large proportion of these are classed as ‘owner-drivers’ ⁵⁹
Freight task volume	Up to 288 million tkm per annum ⁶⁰
Proportion by jurisdictions	Victoria, Queensland and New South Wales are the key jurisdictions which represent 25, 23 and 21 per cent of total agricultural gross value added in Australia, respectively ⁶¹
Key commodities by tonnes carried	<ul style="list-style-type: none"> • crops – cereals for grain, canola, cotton, fruits, hay, vegetables, etc • livestock and other – cattle and calves, sheep and lambs, etc, and • livestock products – wool, milk and eggs.
Key vehicle types	The task is carried mainly by articulated trucks, accounting for more than 70 per cent of total tkm ⁶²

⁵⁸ Australian Livestock Transports Association 2011. Submission upon Safe Rates, Safe Roads Directions Paper (p. 12)

⁵⁹ Australian Livestock Transports Association 2011. Submission upon Safe Rates, Safe Roads Directions Paper

⁶⁰ ABS 2007, Survey of motor vehicle use, cat no. 9208.0

⁶¹ ABS 2010. Principal agricultural commodities produced cat no. 7501.0

⁶² ABS 2007, Survey of motor vehicle use, cat no. 9208.0

Appendix B Scenario Modelling

This section of the impact analysis identifies and defines the key costs and benefits expected with the options.

The discussion is largely conceptual, highlighting the key parameters which will be used to monetise the costs and benefits. The values assigned to these parameters and how they are combined to estimate the costs and benefits are discussed in the CBA.

It is anticipated that the initial role of the tribunal will be on data collection and analysis in order to determine and examine these key driver cost and remuneration parameters. The role of the Tribunal is discussed further in the 'Economic Costs' section.

Driver remuneration

This RIS assumes that the Tribunal would seek to set minimum remuneration for owner drivers that would yield at least minimum wage incomes (net of expenses) for owner-drivers. Therefore, the key expected effect of the options involves a change in the level (and potentially structure) of remuneration for owner drivers and employees. Given the very competitive nature of the road freight industry, this increase would be reflected as a commensurate increase in road freight rates.

However, the CBA does not seek to estimate the change in freight rates to the extent to which this change would be transferred along the relevant supply chain (by a measure notionally equal to the increase in remuneration) and hence, is a distributional issue which is addressed qualitatively. Therefore, the total economic cost of carrying a given volume of road freight would increase in line with higher remuneration.⁶³

The proportion of total change in remuneration that will eventually comprise an economic cost (and hence, feature in the CBA) depends upon what extent the industry substitutes employee for owner drivers and whether the increase in owner driver remuneration, in particular, moves freight rates towards or above an 'efficient level'.

Estimating the number of owner drivers covered under each option

The number of owner drivers and employees that would experience a change in remuneration with the options is a key input to estimating the change in the cost of freight.

The Base Case number of owner drivers is provided by market segment and extrapolated over the evaluation period to 2020/21.

The second step involves estimating the proportion of Base Case owner drivers which would experience a change in remuneration with Option 2 and Option 3, respectively. These are based on estimates of relative compliance between the voluntary options and mandatory options with 60 per cent coverage. This conservative level of coverage has been assumed given the Commonwealth constitutional limitations.

Finally, data collected in this RIS indicates that not all owner drivers receive a remuneration level below a minimum wage. This RIS assumes that drivers will not experience a reduction in remuneration with the options and hence, only that proportion of owner drivers which currently receive below minimum wage will be affected, rather than the total number of drivers.

⁶³ Based on the proportion of road freight carried by owner drivers and not accounting for potential mode shift to rail or shift of freight task to employee drivers.

These estimates and the underpinning assumptions are provided in **Appendix C**.

Estimating the observed remuneration for owner drivers

The first step in estimating the change in aggregate national income with the options is to estimate the current level of remuneration received by owner drivers and employees.

Drivers who work within the road transport industry are categorised according to their employment type being either employee drivers, who work for businesses and/or smaller fleet operators, or self-employed owner-drivers. While the employee drivers and owner-drivers are considered to operate in a 'single market' and perform the same work, current frameworks deal separately with these two employer types.

Employee drivers are dealt with by a variety of industrial awards, including modern awards and enterprise agreements. Assessment of the economic efficiency of these award rates is outside the scope of this RIS.

Owner-drivers are paid a mix of tonnage rates, kilometre rates, per load and hourly rates and it is impossible to examine them collectively because they vary significantly from company to company and state to state and in most cases these freight rates are not published.

This RIS uses ABS Census data on income distribution for 'truck drivers' in the road freight industry. The 2006 Census⁶⁴ data identifies individual weekly income for 'truck drivers' (who work over thirty-five hours a week) in the road freight transport industry by employment type. These are presented as a frequency distribution, i.e. the number of drivers by particular income bands. These data also allow the estimation of the weighted average income by type of driver and the proportion of drivers (by type) which currently receive remuneration below an assumed "notional award" wage.

The approach used to estimate these incomes is detailed in **Appendix C**. Employees are not considered here because, as mentioned earlier, they are already subject to the modern award or enterprise agreements.

Estimating the change in remuneration with the options

Estimating the change in remuneration with the options requires comparison of observed remuneration for 'underpaid' drivers with remuneration that would potentially prevail with the voluntary and mandatory options, respectively. This RIS makes a simplifying assumption that the remuneration levels that would prevail with the mandatory options would be similar to the national minimum wage,⁶⁵ while the same for voluntary option.

There is a range of other State based awards and guidelines available. However, to maintain simplicity, a single award and guideline rate has been selected, both which base remuneration on a simple hourly rate.

The percentage change in remuneration with the options is calculated with respect to the weighted average income received by those drivers in the 2006 Census income bands comprising "notional below-award rates".

The approach used to estimate the change in remuneration with the options is detailed in **Appendix C**.

⁶⁴ Australian Bureau of Statistics 2007, *2006 Census - Australia*, Individual Income (weekly) (INCP) and Occupation 93 (ASCO2) (OCC93P) by Employment Type (EMTP) and Industry of Employment (ANZSIC06) (IND06P)

⁶⁵ Fair Work Ombudsman 2011. National minimum wage, <http://www.fairwork.gov.au/pay/national-minimum-wage/pages/default.aspx>

Economic costs of road crashes

Composition of road safety costs

The key expected benefit with the options is a reduction in fatalities, serious injuries and property damage crashes. There may also be a small increase in productivity due to less time lost in freight movement due to a reduction in crashes.

Reducing crashes generates benefits because road crashes impose economic cost on road users and the broader community. Crash costs include internal costs, which are damages and risks to the individual travelling by a particular vehicle or mode, and external costs, which are un-compensated damages and risks imposed by an individual on other people⁶⁶.

Alternatively, the crash costs categorised from the perspective of the key market and non-market effects are shown below in Table 7.

Table 7: Definition of economic costs of road crashes

Market			Non-market
<i>Human</i>	<i>Vehicle</i>	<i>General</i>	
Ambulance costs	Repairs	Travel delays	Labour in the household
In-patient hospital costs	Towing	Insurance administration	Quality of life
Labour in the workplace	Unavailability of vehicle	Police, property, fire	Casualty's pain and suffering
Insurance claims		Productivity	Uncompensated grief and loss incurred by family and friends
Workplace disruption			
Funeral			
Coroner			

Source: Victoria Transport Policy Institute 2009, Transportation Cost and Benefit Analysis II – Health and Safety Benefits, VTPI. www.vtpi.org/tca/tca0503.pdf; Roads and Traffic Authority NSW 1999, Economic Analysis Manual – Appendix B – Economic Analysis Parameters Updated for 2009, Roads and Traffic Authority, NSW.

Quantifying the change in road safety outcomes

The options seek to reduce the economic and social costs of heavy vehicle accidents related to low levels of remuneration for owner drivers.

This is in turn pursued by increasing the proportion of owner-drivers and employees who receive a safe rate of pay and hence, reduce the likelihood of on-road behaviours which lead to road crashes. This RIS relies upon the limited number of studies which quantify the relationship between remuneration and

⁶⁶ Victoria Transport Policy Institute 2009, *Transportation Cost and Benefit Analysis II – Health and Safety Benefits*, VTPI. www.vtpi.org/tca/tca0503.pdf

road safety to estimate the expected reduction in crashes. The results of each of these studies are shown below in Table 8.

Table 8: Economic costs of road crashes

Author	Result	Comment
Belzer et al (2002) ⁶⁷	Finds strong, statistically significant links between remuneration levels and safety outcomes. Results indicate that a 10% increase in remuneration rates is associated with a reduction in crash numbers of between 9.2 % and 34%	Study concludes that it is difficult to come up with a single summary estimate of the effect of driver pay, as elasticities vary across datasets and model specifications, but conservatively estimates that the relationship between safety and pay probably is better than 2:1.
Rodriguez et al (2006) ⁶⁸	Finds that a 1% increase in pay rates from median levels lead to a 1.33% decrease in crash risk. However, the authors note that the size of the effect on crash risk declines with further pay rises and that the relationship between pay rises and accident risk eventually turns negative.	The authors note that increases in remuneration initially reduce crash incidence, but at a declining rate. The U-shaped relationship found to exist between remuneration and safety suggests substantial practical difficulties in determining optimum remuneration levels from a safety perspective and the potential for significant safety costs to result if regulated remuneration levels fail to identify this optimum level accurately.
Nafukho et al (2007) ⁶⁹	Study consists of a regression analysis conducted in respect of six variables considered to be related to accident risk, including salary and paid time off. The authors find that the six variables all have statistically significant impacts on accident risk. However, the extent of the relationship between the remuneration variables and accident risk was found to be substantially smaller than the relationships estimated in the Belzer and Rodriguez studies. Specifically, the six variables were found <i>in total</i> to explain only 3.2% of the variation in accident rates, while paid time off and salary were among the least significant variables, accounting for 0.4 per cent of the variation in accident rates.	Despite the low explanatory power of the compensation variables they demonstrate a strong and positive effect on driver performance, which determines highway safety. However, Nafukho et al's results in relation to the estimated size of the coefficient - that is, the extent of the relationship between safety performance and remunerations - are very different from those of Belzer et al.

Previous economic analyses commissioned by the Department provide a detailed critique of these and further studies.⁷⁰

The findings of this critique indicate that:

- directly comparing remuneration and safety does demonstrate statistically significant correlations. However, results vary substantially
- the three most recent papers, summarised above, show a) a very small effect, b) a very large effect and c) a U shaped curve, in which a large positive effect of initial remuneration rises eventually turns negative, and

⁶⁷ Belzer, MH., Rodriguez, DA. & Sedo, SA. 2002, *Paying for Safety: An Economic Analysis of the Effect of Compensation on Truck Driver Safety*, sponsored by Science Applications International Corporation and Federal Highway Transport Safety Administration. Available at: www.ilir.umich.edu/SweatshopsOnWheels/PayAndSafetyReport.pdf

⁶⁸ Rodriguez, DA, Targa, F & Belzer MH, 2006. *Pay Incentives and Truck Driver Safety: A Case Study*. Industrial and Labour Relations Review, Vol 59, No. 2, January 2006.

⁶⁹ Nafukho, M., Hinton, BE. & Graham, CM 2007, *A Study of Truck Drivers and their Job Performance Regarding Highway Safety*, Performance Improvement Quarterly 20(1), pp 65-78.

⁷⁰ Jaguar Consulting (2011).

- the literature is very limited in size and focuses on employee drivers.

In response to the uncertainty surrounding the extent to which heavy vehicle safety can be improved by creating a remuneration safety net, it is important to conduct further investigation aiming to address the issues above prior to determining a safe rate. One of the practical approaches to the issues is to commission a body that will investigate the implementation of safe rates which may cover the topics included, but not limited to:

- identifying and addressing the data gaps in order to conduct the necessary investigation around the current state of owner drivers' remuneration, and
- conduct analysis which shows the extent of correlation between remuneration and high risk drivers on the road.

As such, this RIS provides an indicative economic evidence base for establishing a body that will investigate the implementation of safe rates. There is prima facie evidence of the need for such an institution given the commencement (2010) of a major case control study of factors contributing to heavy vehicle crash involvement in Australia. However, this study commenced in 2010 and hence, results are not available for the purposes of this RIS⁷¹.

Monetising the road safety outcomes

The research findings above are used to quantify the road safety effects with each of the options. These road safety effects are monetised by adopting relevant Values of Statistical Life (VoSL) and Value of Serious Injury (VSI) and property damage.

The literature provides a range of values for VoSL and VSI. The main difference between reported values is attributable to the underlying estimation methodology. There are two main methods for estimating VoSL and VSI: the Human Capital Approach (HC) and Willingness to Pay (WTP).

Historically, most countries (including Australia) have used the HC or Gross Output approaches to valuing a reduction in mortality risks. Gross output approaches include (including combinations):

- the cost of restitution method, concerned with the direct costs generated by accidents, for example property damage, emergency services, cost of delays, etc, and
- the HC approach, focussed on the loss of future productivity of the victim. This approach is based on accounting principles: the benefit of avoiding a premature death is given by the present value of the income flow the economy could lose in that case.

These gross output approaches were concerned with the effect of road accidents on output and income, i.e. if an accident were to occur, what would be the direct cost of the accident and the loss of future productivity by the victim as a result of their death or injury. The focus is on the value of lives ex-post (after) the accident.

However, such approaches are open to some criticism for not capturing the *ex-ante* (in advance of knowing whether an accident will occur or not) value people place on safety in terms of avoiding the fatality or injury in the first place and the non-human/external costs of road crashes. Put simply, the value a community places on avoiding an injury or fatality can be higher than the value of the loss of future income if an accident occurred.

⁷¹ Mark Stevenson, Lisa N Sharwood, Keith Wong, Jane Elkington, Lynn Meuleners, Rebecca Q Ivers, Ron R Grunstein, Ann Williamson, Narelle Haworth, and Robyn Norton: *The Heavy Vehicle Study: a case-control study investigating risk factors for crash in long distance truck drivers in Australia* BMC Public Health. 2010; 10: 162. Published online 2010 March 26.

An important conceptual advance was achieved in the 1960s by valuing road safety according to subjective preferences, i.e. the affected population's preferences for the reduced probability of death or severe injury. Road safety in this context is defined as a public good, and the community demand, and hence, value for this public good is given by the summation of each individual's WTP for this good.

This approach can be explained through the following reasoning:

- there is no reasonable upper bound on the value of life in the conventional meaning, i.e. there is no reasonable trade-off between wealth and the certain loss of one's own or another's life
- however, everyone takes risks, some of which could be avoided at the expense of either time or money. When people expend wealth to avoid potentially fatal risks, or accept wealth to take such risks, they implicitly define a trade-off between wealth and the probability of death or injury
- in the context of road safety, individuals have subjective preferences and make trade-offs between wealth and reductions in the risk of their premature death or injury (ranging from severe or minor) from their use of roads, and
- the sum of these individual trade-offs is the amount of wealth society is willing to expend in exchange for road safety improvements which reduce the probability of death or injury.

Importantly, road safety is not valued on the basis of the cost of accidents or the loss of income by victims, but is viewed as the value of a reduction in risk. Increasingly, countries are valuing road safety improvements using WTP rather than the HC. This generally yields higher benefits for risk avoidance. As a result, the social net benefit of safety policy measures has increased in recent years in the developed world, prompting many road safety interventions, otherwise not socially profitable.

The estimates of VoSL, VSI and property damage crashes are presented in **Appendix C**.

Regulatory costs

This section qualitatively describes the key regulatory costs (costs to government) involved with establishing and operating each option. An estimate of these costs is provided in **Appendix C**.

Option 2 – Voluntary approach

Option 2 would involve a range of costs to government. Broadly, these include:

- implementation of a national system of non compulsory payments and conditions applying to owner drivers and the supply chain states in all jurisdictions;
- costs involved with providing dispute resolution processes and publishing guideline rates or costing models according to vehicle types, freight tasks, cost recovery etc, industry targeted information (i.e. model contracts for owner drivers) and related education campaigns; and
- development and implementation of non prescriptive measures, such as voluntary codes of practice and accreditation schemes with application to the supply chain and road transport industry.

Option 3 – Mandatory approach

The key costs associated with the mandatory option involve the establishment of a tribunal. This option will also include enforcement and compliance costs.

Appendix C Data inputs and assumptions

This section identifies the key data and assumptions that are used to estimate the costs and benefits identified earlier.

Number of owner drivers and employee drivers

The economic costs associated with an increase in remuneration with the options are a function of the number of owner drivers and employees which will experience a change in remuneration by segment.

The first task involves estimating the total number of owner drivers and employee drivers, nationally.

There are approximately 231,900 truck drivers on Australian roads⁷² who can be classified by their employment status as employee-drivers or owner-drivers. Advice from DEEWR indicates that the estimated numbers of owner drivers in Australia is approximately 71,000, although some other data sources suggest the number can vary between 20,000-150,000.⁷³

This figure is broadly in line with the industry estimates that around 30 per cent of drivers are owner-drivers.⁷⁴

The estimates for the Base Year are then projected in line with the expected increase in the road freight task growth over the evaluation period⁷⁵ and are presented below in Table 9.

Table 9: National owner driver and employee numbers

Financial year	Employee Driver	Owner driver
2012 ⁷⁶	160,900	71,000
2022	225,900	99,700

In the absence of further data, the proportion of the owner-drivers and employee drivers are assumed to be the same across each scenario.

The total number of owner drivers with the Base Case was then segmented according to the scenarios defined in **Section 6.3**.

The basis for segmentation is shown below in Figure 5.

⁷² Information provided by the Department from non-published ABS data

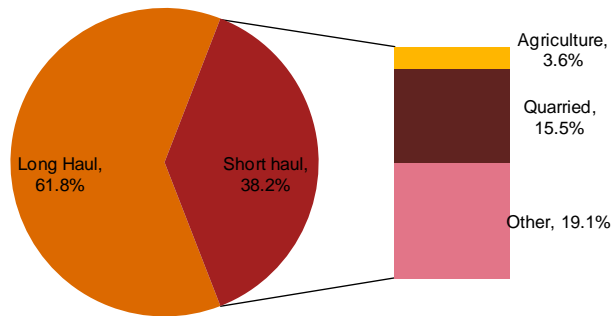
⁷³ Jaguar Consulting (2011, p. 46)

⁷⁴ BITRE 2003, *Working paper 60: An overview of the Australian Road Freight Transport Industry*, Canberra.

⁷⁵ BITRE 2011, *Road freight estimates and forecasts in Australia: interstate, capital cities and rest of state*

⁷⁶ Information provided by the Department from non-published ABS data

Figure 5: Estimated truck drivers by sector⁷⁷



This figure shows the estimated proportion of truck drivers by sector (long haul, short haul, agriculture, quarried and other).

The proportion of long haul and short haul heavy vehicle driver is estimated based on the survey conducted by Wright and Quinlan (2008) which includes responses from 613 drivers in Australia. Of the sample, 379 (or 61.8 per cent) indicates over 90% of assignments belong to long haul and therefore assumed to be the long haul drivers. In the short haul market, the estimated number of driver by sector is referenced by the commodity share of rigid truck – the predominant vehicle type in the short haul market. The estimated proportion of agriculture short haul drivers is approximately 3.6 per cent of entire industry while the quarried segment accounts for 15.5 per cent of all truck drivers.

It is assumed that this segmentation remains constant over the evaluation period and that the scenarios capture 80 per cent of the total number of owner drivers and employees.

The next step involves identifying the proportion of owner drivers and employees which receive remuneration levels below national minimum wage. These proportions are derived from income distribution data ABS Census 2006 data presented Table 10.

⁷⁷ Proportion of truck drivers across the long and short haul was extrapolated from the survey conducted by Wright, L. and Quinlan, M. (2008). Safe payments – addressing the underlying causes of unsafe practices in the road transport industry.

Table 10: Proportions of drivers below ‘notional award’ remuneration

Weekly income band (as defined by 2006 Census)	Average point estimate (\$2011)⁽¹⁾	Owner managers of incorporated (no.)	Owner managers of unincorporated (no.)
Nil income ⁷⁸	0	43	59
\$1-\$149	120	39	81
\$150-\$249	240	94	141
\$250-\$399	420	460	477
\$400-\$599	599	1,477	1,332
Total		7,257	7,268
% ‘underpaid’		29	29

Note (1): The average income estimate per income band was extrapolated in considering the skewness of distribution towards the mean point - towards >\$1,000 / right of the distribution - as per the observed normal distribution. i.e. in each income group, the estimated average income has been adjusted accordingly above the mid-point where appropriate and rounded to the nearest \$50. Then the estimates were escalated by WPI.

Note: the information above has been retrieved based on all truck drivers working in the road freight sector and working more than 35 hours per week. Of the drivers working a minimum 35 hours per week and reported average of more than 40 hours per week, those with a reported income below \$600 per week are defined as underpaid in the model. In the absence of data on incomes by grade, the analysis was unable to describe the award rates by experience and grade nor the mix of drivers’ experience level.

The ABS Census data was segmented into a “notional award” band which is above \$600 per week and working at least 35 hour per week. The numbers of employee and owner drivers that fell below that threshold was taken as a proportion of the total number of drivers in the respective categories to identify the proportions which are underpaid. The data indicates that 29 per cent of owner drivers are currently underpaid.

As discussed, the national workplace system commenced operation and most employee drivers across Australia become covered by a safety net comprising the National Employment Standards and modern awards. Under the national workplace relation system, one of four modern awards applies to employee drivers depending on the sector of the industry they work in. In essence, we have assumed that the award rate paid to employee drivers represents an appropriate safe rate for their work and they would not experience any changes in remuneration under either option.

Through the information above, the model assumes a weighted weekly averaged income for those underpaid owner drivers at approximately \$510.90 in contrast to the national minimum wage of \$620.40.

⁷⁸ A small number of households and businesses usually report nil or negative incomes in the ABS surveys. These are often excluded from any analysis related to income distribution and financial well-being, as research from the ABS has shown that the expenditure of many of these households and businesses is similar to that of households and businesses earning much more, so these incomes are considered an unreliable measure of a household’s standard of living.

The ‘underpaid’ proportions are assumed to remain constant with the Base Case over the evaluation period.

The data presented above are combined to estimate the annual number of underpaid owner drivers by segment with the Base Case below in Table 11.

Table 11: Number of ‘underpaid’ owner drivers by segment (2012 – 2021)

	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21
Long Haul	12,697	13,349	13,939	14,480	15,028	15,652	16,315	16,873	17,371	17,822
Agriculture	740	778	812	843	875	912	950	983	1,012	1,038
Quarry	3,184	3,348	3,496	3,632	3,769	3,926	4,092	4,232	4,357	4,470
Overall sector	20,545	21,601	22,556	23,430	24,316	25,326	26,400	27,303	28,108	28,839

Source: PwC estimates

The final step involves defining when and to what extent the options will affect the baseline number of ‘underpaid’ owner drivers. That is, the number of underpaid owner drivers that will experience a change in remuneration (estimated below).

In both options, the model assumes that the tribunal will be established in 2012/13 and taken effect from 2013/14 onwards. However, note that the tribunal may not be able to reach a decision until then 2013/14 in practice.

The actual numbers of owner drivers that will be affected by the options are based on the following assumptions:

- Option 2 – scenario comprising ten percent of owner drivers, and
- Option 3 – scenario covering 60 per cent of owner drivers and assumes of those covered owner drivers, 90 per cent of them will comply and results in 54 per cent of actual adoption rates.

The number of owner drivers whose remuneration would change is identified by option below in Table 12 and Table 13.

Table 12: Number of owner drivers impacted by Option 2 (2012 – 2021) - under the assumption of 10% compliance rates

	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21
Overall sector	0	0	2,256	2,343	2,432	2,533	2,640	2,730	2,811	2,884

Source: PwC estimates

Table 13: Number of owner drivers impacted by Option 3 (2012 – 2021) – under the assumption of 90% compliance rates

	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21
Long Haul	0	0	7,527	7,819	8,115	8,452	8,810	9,111	9,380	9,624
Agriculture	0	0	438	455	473	492	513	531	546	561
Quarry	0	0	1,888	1,961	2,035	2,120	2,210	2,285	2,353	2,414
Overall sector	0	0	12,180	12,652	13,131	13,676	14,256	14,744	15,178	15,573

Source: PwC estimates

Owner driver and employee remuneration – current

The estimate of the economic cost associated with increased remuneration with the options firstly requires an estimate of the weighted average income for that proportion of drivers who are currently ‘underpaid’. It is assumed that those drivers who currently receive above award or guideline income do not experience a change in remuneration.

A distinction needs to be made between remuneration, the focus of the options and freight rates, which reflect total income including the return to labour or remuneration. The incremental impacts of the options will be on driver remuneration. The extent to which freight rates change in line with remuneration and how the change in freight rates are distributed along the commodity supply chain is a distributional issue which is addressed qualitatively in this RIS.

The measure of owner driver income used in this RIS is based on 2006 ABS Census⁷⁹ data which identifies individual weekly income for ‘truck drivers’ (who work over thirty-five hours a week) in the road freight transport industry by employment type. This RIS identifies the notional current remuneration based on an income distribution as this allows the identification of those proportions of owner drivers and employee drivers which are currently underpaid and hence, would be impacted by the options.

The ABS data indicates that the weighted average weekly income for ‘underpaid’ owner drivers is \$510.90, on average based on 2011 dollars. These are escalated from 2006 estimates using the relevant Wage Price Index (WPI).

The national minimal wages is \$15.51 per hour published by Fair Work Ombudsman has been adopted as the central case for the model and assumed 40 hours per week on average.⁸⁰

⁷⁹ Australian Bureau of Statistics 2007, 2006 CENSUS - Australia, Individual Income (weekly) (INCP) and Occupation 93 (ASCO2) (OCC93P) by Employment Type (EMTP) and Industry of Employment (ANZSIC06) (IND06P)

⁸⁰ Fair Work Australia 2011. National minimum award wage. <http://www.fairwork.gov.au/pay/national-minimum-wage/pages/default.aspx>

Voluntary and mandatory option remuneration

The remuneration with the options in this RIS is proxied by the current national minimum wages for a vehicle driver, i.e. \$15.51 per hour.⁸¹

Given the 2006 Census data indicates the vast majority of truck drivers work between 35 and 40 hours per week, it is assumed drivers will be remunerated on the basis of 40 hours. A wage for a 40 hour week, using these assumptions, would be \$620.40 or \$32,260 per annum.

The increases in remuneration implied by the voluntary guidelines are excessive compared with current remuneration experience by 'underpaid' drivers. This RIS therefore assumes that both Option 2 and Option 3 would imply a safe rate similar to that proposed by the current national minimum wage of \$15.51 per hour.

Road safety benefits

The road safety benefits are estimated by firstly identifying the number of fatalities, serious injuries and property damage crashes by segment, with the Base Case. These are extrapolated over the evaluation period to reflect the effect of non-pay related heavy vehicle safety programs on road safety outcomes and net increase in response to the forecast freight volume growth. These are shown below in Table 14.

Table 14: Number of fatalities, serious injuries and property damage crashes with Base Case

	Total	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21
Long Haul											
Fatalities	880	87	88	88	88	89	89	89	88	86	89
Serious injuries	3,345	330	333	335	336	337	339	337	333	328	336
Property damage	5,933	585	591	594	596	598	601	598	591	582	597
Agriculture											
Fatalities	150	15	15	15	15	15	15	15	15	15	15
Serious injuries	750	56	57	57	57	57	58	57	57	56	57
Property damage	1,010	100	101	101	101	102	102	102	101	99	102
Quarry											
Fatalities	209	21	21	21	21	21	21	21	21	20	21
Serious injuries	794	78	79	80	80	80	80	80	79	78	80
Property damage	1,409	139	140	141	141	142	143	142	140	138	142
Overall sector											
Fatalities	2,378	235	237	238	239	240	241	240	237	233	239
Serious injuries	9,040	891	901	905	907	912	916	911	901	886	909
Property damage	16,034	1,581	1,598	1,606	1,609	1,617	1,624	1,616	1,598	1,572	1613

Source: PwC Estimates

⁸¹ Fair Work Ombudsman 2011, National minimum wage, <http://www.fairwork.gov.au/pay/national-minimum-wage/pages/default.aspx>

The total number of incidents by type for 2011/2012 was escalated by the fatality number in 2010 sourced from the Australian Road Fatality Statistics by the forecast freight task volume by BITRE. For serious injury figures, a ratio of 4.48 serious injuries to each fatality was adopted from Jaguar Consulting.⁸² Following a similar approach, a multiplier of 1.45 was adopted to estimate property damage crashes from fatal and serious injury crashes estimated from the NSW 2009 accident figures reported from NSW Centre for Road Safety.⁸³ Extrapolating the crash information, the estimated ratios of serious injury and property damage to the number of fatalities adopted in the model are 3.80 and 6.74 respectively.

The crash numbers by sector were estimated using information on Australian heavy vehicle accident database collected by Curnow (2002).⁸⁴ The analysis of the reported figures suggests that the long haul operations accounts for 37 per cent of the total crashes and agriculture (livestock) carriers represent 10 per cent of the short haul heavy vehicle accidents. Holding the distribution constant over time and the proportion of total crash numbers assumed in the model are 37.0, 6.3 and 8.8 per cent for the long haul, agriculture and quarry carriers over the evaluation period.

The effectiveness of the options in reducing the number of incidents annually is based on elasticities sourced from the reviewed studies reviewed. These studies relate the expected percentage change incidents to the expected change to driver remuneration.

The implied elasticities from each of the studies are summarised below in Table .

Table 22: Road safety elasticities with respect to changes in remuneration

Author	Findings	Conditions
Belzer et al. (2002)	The study for the individual driver concludes that a 10% increase in the mileage rate is estimated to reduce the probability of a crash by 21%. Note that the model found the degree of elasticity diminishes with an increase in rates.	Although the statistical test indicates the correlation is strong, there are other factors contributes to the crash rate variations, e.g. driver’s experience and experience.
Rodriguez et al (2006)	A 1% increase in pay rates from median level leads to a 1.33% decrease in crash risk, for those drivers currently receiving the industry median award. Extrapolation of the U-shape “pay incentive to truck driver safety” suggests increasing pay 10% to the median level can approximately reduce crash probability by around 20%.	The elasticity is limited to the observed U-shape relationship which implies the size of the effect on crash risk declines with further pay rises and that the relationship between pay rises and accident eventually turns negative.

⁸² Jaguar Consulting (2011, p. 32)

⁸³ NSW Centre for Road Safety 2009. Road traffic crashes in New South Wales – Statistical statement for the year ended 21 December 2009

⁸⁴ Curnow, G. 2002 *Australian Transport Safety Bureau heavy truck crash databases – What do the statistics tell us?* National Heavy Vehicle Safety Seminar, Melbourne, October 2002

Author	Findings	Conditions
Nafuko et al. (2007)	The study concludes six variables have explanatory power but are limited to only explaining 3.2% of the variation in accident rates. Of those variables, three of them are pay related which includes the safety bonus, paid time off and salary. A correlation test suggests that the crash rate demonstrates a negative relationship with the safety bonus (i.e. higher safety bonus will lead to lower crash rates) but positively with the salary (i.e. increase in salary will have a positive response to the crash probability).	The study does not explicitly discuss the coefficient of elasticity. On the basis of contradicting to the hypothesis that increasing remuneration will reduce the crash rates, this study's finding therefore not included in the model.

Notably, all these three studies do not distinguish between crash factors, e.g. whether the cause of crash was due to drivers at fault or not or due. The studies examine the overall crash rates against the variables, by ignoring proportion of crashes that are contributed by the drivers or being due to specific pay related issues. Therefore, the proportion increases in remuneration are taken from the weighted average of underpaid drivers only.

This RIS assumes the relevant elasticity for all segments and crash types is a ten per cent increase in remuneration will lead to 20 per cent reduction in crash rates – assuming that current remuneration is not substantially below the industry median as per the literature.

The application of the elasticity is also subject to the issues such that the extent of crashes which are attributable to driver behaviours which are pay related factors, such as speeding and driving while fatigued. In NSW, speed and fatigue contributed to approximately 22 per cent of heavy truck crashes between 2008 and 2010.⁸⁵ This statistic is broadly in line with the other Australian statistics which indicate this ratio is between 18 to 34 per cent.⁸⁶

Importantly, this RIS assumes that up to 25 per cent of the crashes are attributable to pay-related antecedents and this applies to all sectors and both owner-drivers and employees. In other words, the changes in crash rates to the extent to which they are affected by remuneration is capped at 25 per cent.

The U-shaped relationship has another important implication to evaluate the crash risk. The findings indicate the drivers receiving lower compensation are likely to have higher crash rates – i.e. the crash rates are not equally distributed across driver remuneration bands. In the absence of detailed data, the RIS assumes that underpaid drivers are twice as likely to be involved in a crash.

Having identified the savings in crash numbers by segment, an appropriate economic value is applied to estimate the savings. The OBPR's Guidance Note on VoSL argues that an appropriate base case figure for VoSL is \$3.5 million. This figure is based on research by Abelson⁸⁷. An alternative figure of \$6.0 million has been calculated by Access Economics on behalf of the Office of the Australian Safety

⁸⁵ NSW RTA 2011. Heavy truck crash data analysis – single truck crashes, p. 49, retrieved on 27 September 2011: <http://www.rta.nsw.gov.au/roadsafety/downloads/heavy-truck-crash-data0911.pdf>

⁸⁶ Jaguar Consulting (2011, p. 42)

⁸⁷ Abelson, P. 2007, *Establishing a Monetary Value for Lives Saved: Issues and Controversies*, Paper prepared for the Office of Best Practice Regulation.

and Compensation Council.⁸⁸ Both of these figures are based on meta-analyses of relevant research, using Willingness to Pay (WTP) methodologies.

The WTP approach is widely, though not universally, regarded as superior to alternative (typically human capital based) approaches in calculating VoSL figures. It can be noted, however, that these alternative approaches generally yield significantly lower VoSL figures. Figures within the range \$1.5 - \$2 million are reasonably typical results where human capital based approaches are adopted.

Given the preference of OBPR for the use of a WTP methodology for VoSL purposes, a methodological complication arises from the fact that most estimates of injury costs are based on less comprehensive approaches (typically involving calculation of medical costs and productivity losses) which, at least arguably, substantially understate true costs and are in any case not methodologically consistent with the VoSL approach required to be taken by OBPR.

However, some literature argues that serious injuries should be valued in terms that are consistent with the VoSL figure used, by adopting an estimate that represents a proportion of the VoSL figure. A review of sources indicates that accepted values are in the range of 0.20 to 0.23 times the estimated VSL⁸⁹. This approach is preferred to alternatives because it is comprehensive and it effectively adopts a consistent WTP approach to valuing both fatalities and injuries.

More recently PwC, in association with the Institute of Transport and Logistics Studies (ITLS) at the University of Sydney, undertook a stated choice study to estimate VoSL and Value of Serious injury (VoSI).⁹⁰ This study, unlike meta-analyses referred to above, was the first of its kind in Australia to empirically estimate values, albeit for road safety outcomes in NSW. Also, unlike the methodological issues pertaining to injuries, this study directly estimates the VoSI using a WTP approach and differentiates these values for urban and non-urban contexts. The summary results of this study are shown below in Table 15.

Table 15: WTP estimates of VoSL and VSI

(\$)	VoSL	VoSI	Value of Injury
Urban	5,582,130	410,821	98,758
Non-Urban	6,123,981	571,693	140,521

Source: PwC and ITLS (2008)

⁸⁸ Access Economics 2008, *The Health of Nations: The Value of a Statistical Life*. Report prepared for the Office of the Australian Safety and Compensation Council.

⁸⁹ Soby, BA., Ball, DJ. & Ives, DP. (1993). *Safety Investment and the Value of Life and Injury*. Risk Analysis, Vol. 13, No. 3, June 1993, pp 365-370.

⁹⁰ PwC and ITLS 2008, *Economic Valuation of Safety Benefits*, Final Report prepared for the Roads and Traffic Authority NSW, Sydney.

Similar to the VoSL, the literature suggests a significant range of approaches to determining the value of serious injury. Particularly, the OBPR's VSL guidance note suggests the use of disability weights for injuries which reference to *The burden of disease and injury in Australia*.⁹¹ The value suggested for road accidents is a weight of 0.149 of the Value of Statistical Life Year (VSLY). In the absence of detailed injury information, it was not possible to define the estimates of the VoSI, particularly for heavy vehicle crashes only.

Alternatively, we have assumed that VoSI as a function of VoSL which is independent to the time or duration of injury. Extrapolation of the BITRE data suggests the possible value of VoSI is approximately ten per cent of the VoSL.

Based on the information above, this RIS adopts the road crash values:

- value of statistical life (VoSL) at \$3.5 million;
- value of serious injury at approximately 10 per cent of the VoSL;⁹²
- property damage costs (such cost refers to the damage of property only) are estimated at \$8,148.⁹³

In the CBA, all the figures above have been escalated from the reported year to 2011 dollars. i.e. the VoSL has been escalated from 2007 to 2011 while the same adjustment has been made to property damage values.

Regulatory costs

This section presents the incremental cost to government with each of the options. It should be noted that these estimates may not include all expected costs and hence, should be considered conservative. Further detailed analysis is required to identify and estimate the range of costs involved.

Option 2 – Voluntary approach

The key costs involved with Option 2 include remuneration for industry council members and for materials associated with marketing and publishing. Remuneration comprises a large proportion of the expected total annual cost.

Estimates provided by DEEWR indicate that the annual cost with Option 2 would be \$1.25 million (2012 dollars) between 2012/13 and 2020/21.

Option 3 – Mandatory option

The costs associated with establishing and administering the tribunal is estimated at approximately \$5 million per year (2012 dollars) and comprises of:

- funding to tribunal members and supporting staff
- cost to compliance agency staff
- continuous research budgets
- education, and

⁹¹ Mathers C, et al.. 1999, *The burden of disease and injury in Australia*, AIHW cat. no. PHE 17, AIHW, Canberra

⁹² BITRE (2006) Cost of road crashes in Australia 2006, Research report 118

⁹³ RTA 1999, *RTA Economic Analysis Manual*, 2009 Updated Economic Parameters.

- other resources such as promotion and marketing.

Estimates provided by DEEWR indicate that the annual cost with Option 3 would be \$5.0 million (2012 dollars) between 2012/13 and 2020/21.

Appendix D CBA model results

This section presents the streamed incremental benefits and costs of the options. These are combined to generate the option CBRs and NPVs.

As discussed, the costs to the economy refer to the government's regulatory cost (including establishing and administering the tribunal) and the incremental remuneration for the drivers whom are currently underpaid. The costs for each of the options have been developed using a base set of assumptions outlined in the report's Appendices.

Table 16: Incremental regulatory costs

	Total (\$m 2012)	NPV (\$m 2012)	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21
Option 2	11.3	8.1	0	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
Option 3	45.0	32.6	0	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00

Note: table may not total due to rounding

As advised by the Department, the costs of establishing and administering the tribunal, for Option 2 and Option 3 have been estimated at \$1.25 million and \$5.0 million per annum, respectively

Option 2 – voluntary options with 10% compliance rates

Option 2 refers to the voluntary scheme where the results below present the estimated impacts assuming a 10 per cent compliance rate, i.e. for every 100 underpaid drivers, 10 will experience a change in remuneration with Option 2.

Table 17: Incremental remuneration for 'underpaid' drivers

	Total (\$m 2012)	NPV (\$m 2012)	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21
Overall sector	115.5	79.6	0	0	12.7	13.2	13.7	14.3	14.8	15.2	15.6	16.0

Note: table may not total due to rounding

Affected owner-drivers will receive approximately 21.4 per cent increase in remuneration with Option 2.

The incremental remuneration is determined by proportion of underpaid drivers which are affected by the option. The number of affected owner drivers is then multiplied by the change in the annual remuneration (subtracting their current weighted average of annual remuneration from the proposed remuneration with the option).

The result will vary significantly according to the compliance rate assumed and the weighted average annual remuneration of underpaid drivers.

Table 18: Incremental crashes avoided

	Total	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21
Overall sector											
Fatalities	11	0	0	1	1	1	1	1	1	1	1
Serious injuries	43	0	0	5	5	5	5	5	5	5	5
Property damage	76	0	0	9	9	10	10	10	9	9	10

Note: table may not total due to rounding

The incremental crashes avoided are applied to the relevant crash costs to estimate the incremental crash costs below.

Table 19: Incremental crash cost savings

	Total (\$m 2012)	NPV (\$m 2012)	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21
Overall sector												
Fatalities	44.5	31.1	0	0	5.6	5.6	5.6	5.6	5.6	5.5	5.4	5.6
Serious injuries	16.9	11.8	0	0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
Property damage	0.7	0.5	0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1

Note: table may not total due to rounding

The number of crashes avoided and the reduction of crash costs is assumed for the purposes of quantifying the scenarios to be proportional to the size of relevant sectors. These crash cost savings are incremental to the expected improvements in road safety expected with the National Road Safety Strategy 2011-2020 which aims to reduce fatalities by up to 30 per cent over the decade.

Over the evaluation period, it is anticipated the ten per cent compliance rate will save approximately 11 lives on Australian roads and with a total benefits of \$44.5 million in the next decade. The estimated road safety improvement is equivalent to a further 0.6 per cent improvement above baseline improvements achieved through non-pay means.

Option 3 – Option 3 – 60 % coverage and 90% compliance rates

Option 3 is mandatory and assumed a 60% coverage with 90% of covered owner-drivers comply, i.e. for every 100 underpaid drivers, 54 of them will experience a change in remuneration.

Table 20: Incremental remuneration for ‘underpaid’ drivers

	Total (\$m 2012)	NPV (\$m 2012)	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21
Specific sector												
Long Haul	385.5	265.7	0	0	42.3	43.9	45.8	47.7	49.3	50.8	52.1	53.5
Agriculture	22.5	15.5	0	0	2.5	2.6	2.7	2.8	2.9	3.0	3.0	3.1
Quarry	96.7	66.6	0	0	10.6	11.0	11.5	12.0	12.4	12.7	13.1	13.4
Overall sector												
	623.8	429.9	0	0	68.5	71.1	74.1	77.2	79.8	82.2	84.3	86.5

Note: table may not total due to rounding

Option 3 exhibits a significant increase in total remuneration across the sector as the mandatory safe rates will apply to the majority of underpaid drivers. The financial impacts are a function of the number of underpaid drivers and current remuneration level.

Modelled results indicate the entire sector is anticipated to bear an increase in remuneration cost of around \$100 million in the first year of the option being introduced (2013/14). The owner-drivers will receive around 21.4 per cent increase in remuneration compared with existing assumed pay rates.

Table 21: Incremental crashes avoided

	Total	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21
Long Haul											
Fatalities	22	0	0	3	3	3	3	3	3	3	3
Serious injuries	85	0	0	11	11	11	11	11	11	10	11
Property damage	151	0	0	19	19	19	19	19	19	19	19
Agriculture											
Fatalities	4	0	0	0	0	0	0	0	0	0	0
Serious injuries	15	0	0	2	2	2	2	2	2	2	2
Property damage	26	0	0	3	3	3	3	3	3	3	3
Quarry											
Fatalities	5	0	0	1	1	1	1	1	1	1	1
Serious injuries	20	0	0	3	3	3	3	3	3	2	3
Property damage	36	0	0	4	4	5	5	5	4	4	5
Overall sector											
Fatalities	61	0	0	8	8	8	8	8	8	7	8
Serious injuries	231	0	0	29	29	29	29	29	29	28	29
Property damage	409	0	0	51	51	51	52	51	51	50	51

Note: table may not total due to rounding

As a result of higher compliance rates, it is anticipated that additional one to three fatalities would be avoided per year per modelled sector. This represents close to a 3.5 per cent improvement of heavy vehicle road safety compared to the base case forecast.

Table 30: Incremental crash cost savings

	Total (\$m 2012)	NPV (\$m 2012)	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21
Long Haul												
Fatalities	88.9	62.0	0	0	11.1	11.1	11.2	11.2	11.2	11.1	10.9	11.2
Serious injuries	33.8	23.6	0	0	4.2	4.2	4.3	4.3	4.2	4.2	4.1	4.2
Property damage	1.4	1.0	0	0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Agriculture												
Fatalities	10.6	15.1	0	0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
Serious injuries	4.0	5.8	0	0	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Property damage	0.2	0.2	0	0	0	0	0	0	0	0	0	0
Quarry												
Fatalities	14.7	21.1	0	0	2.6	2.6	2.7	2.7	2.7	2.6	2.6	2.7
Serious injuries	5.6	8.0	0	0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Property damage	0.2	0.3	0	0	0	0	0	0	0	0	0	0
Overall sector												
Fatalities	240.3	167.7	0	0	30.0	30.1	30.2	30.4	30.2	29.9	29.4	30.2
Serious injuries	91.4	63.7	0	0	11.4	11.4	11.5	11.5	11.5	11.4	11.2	11.5
Property damage	3.8	2.6	0	0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

Note: table may not total due to rounding

As a result of heavy vehicle road safety improvements, Option 3 will generate a benefit of around \$42 million per annum over the evaluation period.

The results above are combined to produce the measures of economic merit below:

Table 31 Measures of economic performance

	Option 2 – voluntary 10% compliance rate		Option 3 – mandatory 90% compliance rate of the 60% coverage	
	BCR	NPV	BCR	NPV
Overall sector	0.49	-\$44.4m	0.51	-\$228.4m

Appendix E Best case scenarios

This section defines and presents the results of two additional scenarios. These scenarios are defined as 'best case' scenarios, i.e. scenarios which adopt specific assumptions (within the constrained CBA framework) that lead to the maximisation of net benefits or minimisation of net costs. It should be noted that scenarios differ from the sensitivity analyses identified earlier. Unlike sensitivity analyses, scenarios imply the alteration of multiple variables concurrently. It should be further noted that PwC does not endorse these scenarios as containing reasonable assumptions and/or likely or reasonable outcomes, but rather has included them for illustrative purposes to demonstrate the sensitivity of the modelling and the assumptions used.

The first scenario recognises that there are diminishing marginal benefits in terms of safety beyond certain levels of remuneration compliance and coverage and hence, incremental remuneration cost. This is because the total number of avoidable crashes in a particular year is capped at 25 per cent.

Through an optimisation exercise, coverage and compliance rates are identified beyond which additional remuneration increases do not yield additional safety benefits. These assumptions are:

- Option 2, effective rates = 50% (compliance rate)
- Option 3, effective rates = 20% (40% coverage x 50% compliance rate)
- Elasticity -2.5, i.e. 1% increase of remuneration leads to -2.5% of crashes, on average

The results of this scenario analysis are shown below in Table .

Table 32: Scenario analysis – optimising coverage and compliance rates

	Option 2 – voluntary 50% compliance rate		Option 3 – 40% coverage and 50% compliance rates	
	BCR	NPV	BCR	NPV
Overall sector	0.62	-\$153.4m	0.56	-\$83.4m
Specific sector				
Long Haul			0.34	-\$78.4m
Agriculture			0.99	-\$0.1m
Quarry			0.32	-\$20.2m

The results of the scenario analysis shown above indicate that the additional costs would still outweigh the additional road safety benefits, albeit marginally in the case of the short haul agricultural sector.

The second scenario presented below recognises that any movement towards an efficient remuneration rate would comprise a benefit in an economic CBA, rather than a cost. In the absence of any detailed data, this RIS conservatively assumes that observed remuneration is 'efficient' and therefore, any increases in remuneration with the options would comprise an economic cost.

However, this scenario assumes that the efficient remuneration rate is higher than the average remuneration observed in the market and that it is (simplistically) proxied by the national minimum wage. However, as noted earlier in this RIS, estimation of an efficient remuneration rate is beyond the scope of this study. This RIS also does not provide any supporting evidence that the minimum wage would approximate an efficient rate. This scenario is put forward for illustrative purposes only to draw attention to the fact that further research in relation to the efficient remuneration rate may indicate

that it is higher than average remuneration observed in the market and as a result, the central case estimates of incremental remuneration costs in this RIS are relatively optimistic.

The results of the second scenario analysis are shown below in Table .

Table 22: Scenario analysis – defining the minimum wage as an efficient remuneration level

	Option 2 – voluntary 10% compliance rate		Option 3 – 60% coverage and 90% compliance rates	
	BCR	NPV	BCR	NPV
Overall sector	5.54	\$37.0m	7.48	\$210.9m
Specific sector				
Long Haul			4.59	\$72.3m
Agriculture			12.87	\$13.9m
Quarry			4.37	\$17.0m

Theoretically, given that the observed average remuneration for underpaid drivers is below the national minimum wage, any movement towards the minimum wage would comprise a benefit. The large CBRs in this scenario are unsurprising and reflect that all remuneration related economic costs are avoided, ie. a ‘no-regrets’ policy.

However, this is a highly contentious area. In the absence of detailed research, there is significant uncertainty surrounding the actual efficient rate.

Moreover, CBA is partial equilibrium framework, ie. it is not capable of adequately capturing the effects of options which affect quantities and prices in multiple markets. The key implication of this is that even if further research does indicate that the efficient rate is higher than the observed remuneration rate, significant (non-marginal) increases in remuneration would not simply translate into commensurate benefits. Significant flow on-economic costs may be expected in related markets, impacts which would not be adequately captured in a CBA.

