A~ SPECPIPE

GROUP

Quality • Performance *Service

15 January 2004

Mr Mike Woods
Presiding Commissioner
Productivity Commission
PO Box 80

BELCONNEN ACT 2616

Dear Commissioner,

RE: National Workers' Compensation and OHS Inquiry

Pollution in the Workplace

This submission deals with pollution of the workplace by motor vehicle exhaust emissions and the resultant significant health and safety issues arising.

It highlights the inability of employers to comply with uncoordinated and contradictory requirements of Federal, State and Territory legislation covering Workers Compensation and Occupational Health and Safety.

Air pollution is thus the focus and reference will be made to specific reports and research on the effect of such pollution on workplace environments. The level of air pollution is shown to vary with the degree of proximity to vehicle access, roads, railways or traffic volumes.

Role of Governments

The roles of the Federal Government and State or Territory Governments are shown to be clearly delineated in regulation and policing of the emissions standards of both new and inservice vehicles. Both regulation and enforcement have proved ineffective.

The present situation illustrates

- Lack of a consistent coordinated National approach;
- Existence of serious workplace air pollution;
- Deaths of workers and invitees from pollution annually exceeding the road toll;
- Cost to the community of $17 billion per annum;
- Failure to recognize the cause as air pollution from vehicle exhaust emissions;
- Failure to link the situation to Workplace Safety issues;
- Failure of Ministers and Members to address the issues;
- Disregard of Occupational Health and Safety Legislation;
- Inaction by Public Service and Statutory Authorities on breaches of legislation;
- Consequent non compliance by the Private Sector;
- Failure to implement action on existent reports on the issues.

Risk Assessment

In June 2001 the Federal Government established National Environment Protection Committee published the National Environment Protection (Diesel Vehicle Emissions)

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Measure Report which again established standards and protocols for new diesel vehicles and suggestions for "in-service" vehicles. The various States and Territories have again failed to take up the issues.

Extracts of the Report appear in **Appendix A** to this submission.

Travel Demand Forecasts for Diesel Vehicles

It is evident that the largest absolute increase in travel demand will arise from Light Commercial Vehicles (LCV's) followed by cars and articulated trucks.

This diesel demand was used to estimate the number of vehicles in each category by assuming an annual distance travelled by each vehicle category during the forecast period. The appended table shows that this methodology gives a diesel vehicle fleet that is estimated to grow from 8.3% of the total vehicle fleet in 1996 to 15% of the total fleet in 2015.

It should be noted that the estimates of vehicle numbers such as given in this table are dependent on many different assumptions as to the future, some of which may not be fulfilled. All of these assumptions are made very transparent in this report and the actual spreadsheet models can be altered, as further data becomes available. The tabular results given in **Appendix B** hereto embody the assumptions that have been made.

Other background information that needs to be considered after assessment of the material in Appendix B;

The number of vehicles that will still be operating by 2015 that were first registered prior to the introduction of any new emissions regulations for new vehicles will still exceed the number of newer vehicles.

The data does not take into account non-road transport vehicles such as private farm, mining or commercial vehicles, forklifts, tractors, fixed generating gear, commercial building site plant etc.

It has also been established that the replacement of diesel with CNG (compressed natural gas) is not a solution as a volume six times that of diesel is required to achieve the same energy output. The fact that CNG may provide a 40% (approx.) reduction in exhaust pollution when compared to diesel is eclipsed by the required increase in consumption and subsequent total emissions.

A diesel catalyst could also be adapted for fitting into exhaust air stacks such as in the M5 East Tunnel and the proposed Cross City & Lane Cove Tunnels as a method of reducing emissions released to atmosphere. Reference sources on these observations are set out in **Appendix C.**

Government and Bureaucratic Inaction

Whilst the Government (Federal, State and Local) continue to ignore the issues of exhaust emissions a potential problem under various items of Workcover Legislation continues to exist. The work environment for employees such as drivers, toll collectors, parks & garden staff and others is not safe relative to potentially fatal diseases caused by vehicle emissions.

Of most concern is how does an employer or an individual register a complaint with regard to vehicle exhaust emissions or incident or unsafe working environment without falling as a possible victim to the statutory authorities that legislate that an employer **will comply.**

This risk revolves around the employer putting an employee into an environment where third parties are responsible for the major portion of the pollution and take no preventative action to minimise or eliminate the risk. There is no notion of an employer attempting to perform to best endeavours etc. to comply with health and safety issues pertaining to employees and the public.

The legislation does not allow for degrees of compliance, only total compliance. There is no path for the Private Sector employer to act without becoming a target of a complaint. In this regard the existing legislation is flawed and consequently ineffective.

ACTIONS TAKEN TO DATE

Federal Government General

Australian Design Rules - the Federal Govt being responsible for OE (Original Equipment - new vehicles) introduced the 1986, ADR 37/00 requiring all "passenger vehicles" to be fitted with catalytic converters from January 1988 to coincide with unleaded petrol.

The attempt to provide a lower polluting fuel has been promoted at a Federal level through the ethanol content in unleaded fuels, testing of ethanol mixes with diesel, compressed natural gas alternatives, Australian Design Rules for vehicles to the market and the former alternative fuels grant scheme. Each has met with varying degrees of success or impact;

> Ethanol - the general perception is that the product is sourced from sugar rather than the majority coming from wheat. If the perception is incorrect then the reported issues of further subsidies to sugar farming on top of the current levies is incorrect.
>
> Compressed Natural Gas (CNG) according to the NSW - RTA "has not been as successful as hoped". The perception that gas is cleaner is correct to a degree; pollution is not visible, CNG is approx. 40% lower in emitted pollution, however, there is a required volume of CNG of 6 times that of diesel to have equal energy output. The absence of large volumes of "black soot and smoke" - THC, PM10 & PM 12 particles which have been proved to be carcinogenic are still applicable to CNG. It has been reported that CNG vehicles require maintenance cost of between 5 and 6 times that of diesel as well as having operational limitations.
>
> Alternative Fuels Grants Scheme - Greenhouse Office - this body concentrated on C02 as being the major greenhouse gas yet the Kyoto Protocol nominated 5 gas groups. This means that 4 groups including NOX and THC (Thermal Hydrocarbons - PM10 & PM12) from diesel fuels were ignored or treated as being of less importance, without sound reasons.

The response from members of all parties in Canberra (Liberal, National, Labour, Democrat, Green and Independent) has been disinterest or expectation that it is somebody else's problem. In fact it has been suggested to me by a National Party Senator that "Treasury should not be looked to for an environmental solution".

This was in response to a suggestion that the diesel fuel rebate should be given on the basis of having a form of anti-pollution device on the diesel vehicle and not on the basis of geographic or political imperatives.

This is despite the fact the diesel fuel rebate scheme was established as a "trade off' with the Democrats to gain agreement on the establishment of GST.

Health issues exist beyond doubt on available material. Continued procrastination by our politicians and bureaucrats, will result in increased health costs (a major issue for all governments), environmental neglect, and further deaths of Australians.

State and Territory Governments

The various State and Territory Governments are responsible for the "aftermarket" or "in-service" vehicles. Not one of these have introduced or maintained any regulations or legislation for mandatory testing of emissions.

This is despite the known life of a pasenger vehicle catalyst to be approx. 5 years or 100,000 km if it is maintained or not damaged by such items as "traffic calming devices". On this basis the introduction of unleaded fuels etc. to lower emissions has been negated over the past 14 years by the probability of the majority of vehicles having untreated emissions.

At a State level the argument given is "how can the motorist be subjected to mandatory emission checks on an annual basis, as happens overseas, whilst diesel emissions are so visible and remain unchecked?"

The NSW **RTA** was approached with a concept that we believe to be viable for treatment of exhaust emissions from tunnel stacks. Given the number of vehicles with inoperative catalysts and untreated diesel fumes it would be possible to insert a catalyst into the extraction system, electrically heat the unit and treat the gases before venting to atmosphere. The response from the **RTA** was:

(a) the volume of gas would be too large to treat - incorrect according to technical advice from the US,

(b) the system would involve a cost for electricity, and

(c) we have somebody in the **RTA** looking at electrostatic treatment which would be a partial treatment (Carl Scully is reported as saying a "placebo") to keep it in house and not seek alternatives.

Following the NSW State elections we were advised by the **RTA** that the M5East tunnel was no longer an issue and it had been "bumped down the line".

No action taken other than to allow the Cross City and Lane Cove Tunnels to be without exhaust filtering or treatment. Mr Paul Forward **(RTA** CEO) believes that mixing the vented emissions with "fresh air" is sufficient.

Current Issues

Operating under Current Legislation

An employer having an employee in a vehicle where the issue of vehicle emissions has created a health and safety issue has only limited actions available to comply with the OHS Regulations.

The vast majority of vehicle emission pollution in major cities is sourced from government vehicles (refer above RMIT) There is no corrective action by Government. An employer has no appropriate action available short of having all employees drive with respirators on.

On the face of it the government (all levels) is in breach of the Act and subject to the penalties that it has directed toward commerce, industry and the private sector. The Minister, Department Head or Supervisor or the Premier or the Prime Minister are indemnified by the taxpayer for failing to comply with OHS legislation whereas there would be no such relief for Directors and officers of Private Sector employers.

The frustration associated with knowing of a hazard, being unable to fix the hazard or comply with legislation is compounded by the problem with "Duty to Notify Pollution Incidents Under the NSW POEO Act" as "a pollution incident is required by the POEO Act to be notified if it: involves actual or potential harm, that is not trivial, to the health or safety of human beings or to ecosystems".

With reference to the following comments included in **Appendix** C by reputable sources how do we "exist" within the framework of legislation, obligations as an employer and being concerned with the environment?

The current legislation lacunae coupled with the low awareness by the consumer that their "environmentally friendlier" vehicles produced after 1988 have provided a false sense of security in the current exhaust emission levels of motor vehicles. It has been politically okay to penalise owners of older vehicles operating on leaded fuels but the fact that a catalytic converter has an effective operating life of 5 years, shorter if tampered with or damaged, has not been made common knowledge. Once damaged the vehicle emissions will result in higher levels of air pollution. The issues of in-service diesel vehicles have not been addressed.

The broader issue, other than the experiences above, on which we seek input are in respect of the Occupational Health and Safety Regulations 2001 extracts of which with comments comprise **Appendix D.**

The issue of vehicle emissions has been addressed at Federal level through the Australian Design Rules and the NEPM programs, however the enforcement or introduction of standards in the aftermarket /in-service area is neglected by the States and Territories.

Under current State Legislation Employers must provide safe working environments, not attempt to, whilst the growing evidence suggests that vehicle emissions are a major contributor to health costs and deaths each year and the major contributor to health risks continues to ignore responsibility for or the effect of any action.

A recent article published by the Australian Financial Review in part states - "Professor Kearney's report shows the growing body of international and Australian scientific evidence of the risks posed to the public by traffic related pollution. The report claims that urban air pollution is costing Australia about $17 billion every year in related health costs and could be linked to 2400 deaths a year".

National Occupational Health & Safety Commission

Whilst the National OHS Strategy 2002-2012 indicates that there were "205 compensated fatalities in 1999-2000 resulting from work-related injuries" and "estimated that over 2,000 people die per year from past occupational exposures to hazardous substances", how many of the 2,400 deaths mentioned in Professor Kearney's report are included because they worked in open environments subjected to vehicle pollution, drove vehicles to and from work or for a living, collected tolls etc. or are these all additional?

The current arguments pertaining to the relative contributions to the national health budgets by the Federal, State and Territory Governments should have a penalty to the States and

Territories for negligence and failure to address a growing problem if the estimated costs are $17 billion today (more than half of the Federal Health budget or over 35% of the combined other contributors) and it is growing then surely any correction or reduction of the source problem will reduce current and future costs.

The National Occupational Health & Safety Commission has advised the following;

> "It (Commonwealth Govt) sets standards that are adopted and enforced at a State level and the Commonwealth has no involvement in enforcement".

What then is the purpose of this body other than a further indication that maybe the National Occupational Health & Safety Commission is a waste of tax payer's money in terms of resolving issues, establishing uniformity of legislation and ensuring that the major employer, namely governments, comply with any requirements?

Under the current disjointed approach and enforcement the OH&S issues a question of how are the various Governments (Federal, State and Local), being major employers of Australians, display and show regard for workplace safety or injury prevention or be held accountable as private and commercial employers. Without some form of enforcement by a regulating authority are there being two standards in play?

There is obviously an enforceable duty of care to employees by the Federal, State and Territory Governments at law

It is of interest to note the recent passing of legislation by the ACT Government pertaining to "workplace deaths" and the automatic guilt of employers as contributors to such accidents which is intended to effect mandatory jail terms for the employer.

Does the passing of such legislation and the debate by other jurisdictions and the potential application ever appear on the agenda of the Ministers' Council? If so, who would be the nominee of the applicable government to be presented to the courts and ultimately jail as is the case with private sector employers?

Through the efforts of the Australian Industry Group enquiries were made of the National Occupational Health & Safety Commission. Their spokesperson responded that they were "sympathetic but in effect unable/unprepared to progress your issue".

Enquiries were then made to the Federal Minister for Employment and Workplace Relations, the Hon Mr Kevin Andrews MP, in his capacity of Chair Workplace Relations Ministers' Council, specifically:

- Is the National OHS Strate 2002 - 2012 as signed off by representatives of the Federal Government, State and Territory Governments, Australian Chamber of Commerce and Industry and the Australian Council of Trade Unions in effect or just another initiative of Government to create another forum for bureaucratic nonsense?

- If the Strategy is meant to be viable and effective then the National Prevention Principals -

    - Governments, in their capacity as major employers, policy makers, regulators and procurers, have considerable influence over the achievement of better OHS outcomes in Australia.

- Effective national action requires major national stakeholders, including all governments, to be committed to co-ordinated, consistent and co-operative approaches to OHS improvement.

The above are being ignored if the response of the spokesperson of the National Occupational Health & Safety Commission has been correctly conveyed.

- Other Strategies, priorities and actions as defined in the Strategy Document are also apparently not important it would seem. Most notably is the consistency in regulatory framework, strategic enforcement, effective incentives and compliance support. Are there any processes or plans to correct weaknesses?

Potential Future Liability

The Australian Financial Review reported on (Monday 8‘" September 2003) - "The High Court has opened the door for asbestos companies and victims to lodge multimillion-dollar claims against governments for their failure to protect workers from the material".

No doubt known disease from vehicle emissions will also follow the path for future taxpayers to front yet another bill for the actions, inaction or negligence of those elected or paid to be responsible for providing guidance or solutions.

Does this also mean that all government and private sector employees can take action against their employer for unsafe work places and practices under Workcover? The taxpayer will pay again as the government is a contributor to the workplace hazard which will damage employees and third parties.

SUMMARY

Whilst this document has been prepared principally from other published material it is clearly evident that;

- Although the effects of vehicle exhaust pollution on both the environment and the population at large is known by the various levels of government there has not been any effort to adequately address the in-service fleets.

- The initiatives of the Federal Government in establishing new vehicle standards are diminished by the lack of action by State Governments in ensuring continued compliance.

- There has been a failure of State & Territory Governments to maintain the emissions standards of passenger vehicles since 1988 when it was expected, as is the case internationally, that annual emissions testing and compliance certification would be introduced.

- There has been no action taken on diesel vehicle emissions for in-service vehicles other than periodic enforcement of "10 second smoke laws" despite availability of devices that can be fitted to reduce emissions pollution.

- the use of CNG (compressed natural gas) does not eliminate pollution other than visible smoke.

- The use of CNG on public transport (buses in particular) is in conjunction with the catalytic converters (anti-pollution device) which are available for diesel engines but rejected.

- That the vehicle emissions pollution, increases health risks resulting in incapacity and death and failure to provide a "safe working" environment will continue to escalate.

- The ability of the private sector employers to provide a safe working environment for both ethical, moral and legislative reasons is hampered as a result of the largest employers (Government) having no regard for providing a safe working environment.

- Whilst there is a reluctance for action, of a coordinated nature, between the various jurisdictions and various State or Territory legislation contradicting OH&S regulations how can enforcement of any part of the OH&S regulations against the private sector be reasonably considered. This is compounded by the ACT's recent legislation pertaining to employers providing a safe work place or face jail.

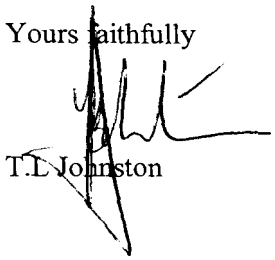
In summary what we are seeking is advice on how to comply with legislation and the associated demands of these and other regulations whilst there are so many conflicts within the expectations placed upon an employer. We appreciate that employees are assets of our business and should be protected from hazards, be they environmental or physical and make every attempt to do so. Political appointees claiming that the levels of exposure are too low cannot ignore the fact that there are environmental hazards that may cause illness or death. How many cigarettes or how long the exposure to "passive smoking" before health concerns arise? Today, it would appear that one cigarette or any time of exposure is significant.

The fact that the in-service diesel vehicle fleet in Australia is approaching an average "life usage" of 10 years the cost to industry, commerce and transport would be prohibitive to simply option for replacement. There is evidence, as experienced overseas, that given financial incentives to negate the additional cost of in-service vehicle emissions treatments most responsible employers would take necessary action.

The Productivity Commission report touched on incentive versus reward and if consideration was given to a scheme of extending the diesel fuel rebate to environmental compliance rather than geographic or political bias there would be significant reductions in the estimated $17 billion added to the health budget.

As the issues of vehicle emissions grow to the magnitude of cigarette smoke and asbestos with the compounded effect of government forecasts of major growth in pollution the costs to the health budget, workers compensation claim, the environment and the population may be too great to arrest.

Yours faithfully



T.L Johnston

Appendix A

National Environment Protection Council (NEPC)
The NEPC produced a document titled -
Diesel Vehicle Emissions , Impact Statement for the Draft National Environment Protection (Diesel Vehicle Emissions) Measure - Public Consultation February 2001.

The following comprise extracts of the document;

> "Diesel vehicles contribute disproportionately to urban air pollution. Although diesel vehicles comprise less than 10% of the total Australian fleet and approximately 13% of vehicle kilometres travelled, they contribute about 40% of the oxides of nitrogen (NOx) emissions and about 60 - 80% of particulate emissions by the road transport sector. NOx is a precursor to the formation of smog. Particles have been identified as a major health risk." - #30 Statement of the Problem - Executive Summary.
>
> "Industry agreements. This approach would be unlikely to involve all diesel vehicle owners and the voluntary approach could again lead to national inconsistency.
>
> State regulation. State regulation is likely to lead to different standards and different strategies across Australia. This would create inefficiencies for industry.
>
> Commonwealth regulation. Management of in-service motor vehicles has traditionally been the role of the States and in-service standards for all other aspects of vehicle performance are regulated by the States based on NRTC model legislation. While it may be possible for the Commonwealth to use its constitutional powers to regulate in this area, other effective national approaches are available, particularly the option of a National Environment Protection Measure and the development of standards through the National Road Transport Commission." - #5 - 15 Proposed - Approach Executive Summary.
>
> "Diesel vehicles are major contributors to urban air pollution. Thus diesel vehicles, though comprising less than 10% of the total vehicle fleet, contribute approximately 40% of oxides of nitrogen emissions and 60 - 80% of particulate emissions from the road transport sector. Whilst diesel vehicles currently comprise a small part of the vehicle fleet, their proportion is increasing rapidly. In 1995 diesel vehicles comprise 8.3% of the fleet, and are projected to increase to 15% by 2015. Over this time diesel vehicle travel in metropolitan areas is anticipated to increase by 146%. Despite improvements to emission standards for new vehicles, and a consequent reduction in total emissions, continued annual growth in vehicle kilometres travelled and fuel consumption mean that the diesel fleet will continue to be a significant source of pollutants." Section 2 - Statement of the Problem.

National Environment Protection Council in its published
"The Australian Diesel Fleet - Existing Vehicle Characteristics and Modeling of Transport Demand, Vehicle Populations and Emissions - November 1999,

The Australian Diesel Fleet - Existing Characteristics and the Modelling of Transport Demand, Vehicle Populations and Emissions - National Environment Protection Council (November 1999) defines the number of vehicles in service and that expected trends over the coming 15 years.

The number of diesel vehicles in Australia in 1995 by ABS vehicle category, as determined from adjusted Survey of Motor Vehicle Use data, is given in the following table.

Vehicle Type	Number of Diesel Vehicles	Total Number of Vehicles	Diesel Vehicle No's (% of total vehicles)
Passenger Vehicle	223,387	8,608,906	2.6
Light Commercial Vehicle	332,932	1,566,868	21.2
Rigid / Other Trucks	253,968	351,154	72.3
Articulated Trucks	56,906	57,939	98.2
Buses	37,338	45,511	82.0
Total	904,529	10,922,746	8.3

The following table gives a summary of the share of vehicle numbers, distance travelled, freight task and fuel consumed for diesel vehicles relative to the total vehicle fleet.

Summary of Diesel Vehicle Numbers, Distance Travelled, Freight Task and Fuel Consumed Relative to the Total Vehicle Fleet

Diesel Vehicle	Vehicle No's (% of Total)	Distance Travelled (%of Total)	Freight Task (% of Total)	Fuel Consumed (% of Total)
Passenger Vehicle	25	18	-	8
Light commercial Vehicle	37	30	1	14
Rigid Truck	27	25	20	28
Articulated Truck	6	21	79	43
Bus	4	6	-	6
Other Truck	1	1	-	1
Totals	100	100	100	100

Articulated trucks are only a small fraction of the total diesel vehicle fleet but contribute a much larger share of the distance travelled, freight task and fuel consumed by all diesel vehicles.

A similar summary of diesel travel, fuel consumed and freight task within metropolitan areas is given in the table below.

Summary of Diesel Metropolitan Distance Travelled, Freight Task and Fuel Consumed Relative to the Total Vehicle Fleet

Diesel Vehicle	Distance Travelled (% of Total)	Freight Task (% of Total)	Fuel Consumed (% of Total)
Passenger Vehicle	23	-	11
Light Commercial	23	2	12
Rigid Truck	35	41	40
Articulated Truck	12	57	26
Bus	7	-	11
Other Truck	1	-	1
Totals	100	100	100

The above two tables show that the greatest amount of diesel fuel consumed nationally is by articulated trucks (43%) but in the capital city areas it is from rigid trucks (40%). The emission characteristics of rigid trucks will therefore be of importance for pollution studies in the capital cities.

Appendix B

The Existing and Forecast Diesel Fleet

Vehicle Type	Total Number of all Vehicles 1995	Total Number of Vehicles 2015	Number of Diesel Vehicles 1995	Number of Diesel Vehicles 2015
Car	8,608,906	11,021,000	223,387 (3)	556,870 (5)
Light Commercial	1,566,868	3,236,000	332,932 (21)	1,280,170 (40)
Rigid / Other Trucks	351,154	327,690	253,968 (72)	264,360 (81)
Articulated Trucks	57,939	89,460	56,906 (98)	87,890 (98)
Buses	45,511	52,170	37,338 (82)	38,180 (73)
Total	10,922,746	14,726,320	904,529 (8)	2,226,480 (15)

() signifies % of diesel vehicles to the total number o ve c es in t is ve c e category.

The estimated metropolitan and total distance traveled by the diesel vehicle fleet in Australia at various vehicle ages and at the start and end of the forecast period is given in the table below. The table indicates that although 25% of the diesel vehicle fleet is greater than 16 years old these vehicles provide only 6 to 8% of diesel travel over the analysis period.

Distance Travelled by Vehicle Age Group for Australian Diesel Fleet

Vehicle Age (years)	% of total diesel fleet population	Metro distance travelled millions km 1996(1)	Metro distance travelled millions km 2015	Total distance travelled millions km 1995	Total distance travelled millions km 2015
0-3	26	2,417 (27)	6,354 (29)	6,296 (27)	16,374 (30)
4-6	14	1,959 (22)	4,867 (22)	4,545 (20)	12,224 (22)
7-10	18	2,096 (24)	5,097 (23)	5,699 (25)	12,646 (23)
11-15	18	1,688 (19)	4,003 (18)	5,025 (22)	9,719 (17)
16-20	6	658(7)	1,410(6)	1,359(6)	3,123(6)
>20	19	67(l)	100(i)	293(l)	188 (0.3)
Total	100	8,888	21,832	23,217	54,275

1996 is used for metropolitan travel as 1995 data in this format is not

Notes: 1.
available for all
vehicle categories. ( )
signifies % of total diesel for column

A further analysis of the estimated distance travelled by diesel vehicles in metropolitan areas is given in the following table and indicates that by 2015 light commercial vehicles will become the dominant diesel vehicle category, accounting for 43% of the total annual distance travelled in metro areas. The percentage of distance travelled by rigid trucks is estimated to decline from 34% of all diesel travelled in 1996 to 18% in 2015 as freight forwarders continue to switch to the use of articulated vehicles.

		Distance Travelled by Age Millions vehicle - km						Total metro (3)
Vehicle Type	Year	0-3	4-6	7-10	11-15	16-20	>20	
Passenger Vehicle	1996 (1) 2015	598.7 1695.3	452.4 1213.0	471.6 1264.5	378.0 1013.6	142.6 382.4		2043.2 (23) 5478.8 (25)
Light Commercial	1996 2015	668.1 2945.9	477.2 2104.2	487.8 2151.0	371.2 1636.6	112.4 495.7	4.2 18.7	2121.0 (24) 9352.0 (43)
Rigid Trucks	1996 2015	612.1 789.4	642.7 828.9	748.0 964.6	658.0 848.6	336.7 434.2	63.0 81.3	3060.5 (34) 3946.9 (18)
Articulated Trucks	1996 2015	354.5 825.9	248.8 579.6	244.6 569.9	165.8 386.4	22.8 53.1		1036.5 (12) 2415.0 (11)
Buses	1996 2015	183.6 187.2	138.7 141.4	144.6 147.4	115.9 118.2	43.7 44.6		626.6(7) 638.8(3)
Totals	1996 2015	2417.0 6353.7	1959.8 4867.1	2096.6 5097.5	1688.9 4003.4	658.2 1410.0	67.3 100.0	8887.8 21831.6

The following table indicates just what vehicle types are contributing to the total emission load of each pollutant in metropolitan NSW. The percentage contributions of each vehicle type both 1996 and 2015 are given so that any change can be identified.

Vehicle Type	CO		NOx		HC		PM10	
	1996	2015	1996	2015	1996	2015	1996	2015
Passenger Vehicle	2.5	5.3	0.8	2.2	1.4	1.8	3.4	7.7
LCV's	5.5	10.6	2.8	7.1	2.7	3.9	7.9	11.4
Rigid Trucks	61.2	56.3	53.9	34.6	75.3	75.0	59.7	55.2
Artic. Trucks	20.2	18.4	26.5	39.7	9.8	7.2	19.4	17.0
Buses	10.6	9.4	15.9	16.5	10.8	12.1	9.6	8.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Appendix C

RMIT University - Dr Ed Boyapati presented the findings at the 8‘h International Conference on Energy and Environment in Cairo, Egypt (January 2003).

> "Research from RMIT University shows that public transport networks release more greenhouse gas emissions than private cars. According to the study, trams produced the highest amounts of greenhouse gas emissions followed by trains, buses and cars".

Over the past 8 months there have been a number of press reports indicating the dangers of diesel emissions and the effect on the lives of people;

> ABC Television - 4 Corners 5‘h November 2002
> Title: Search for A Supermodel
> Professor Tony McMichael - National Centre for Epidemiology ANU

"There are more deaths being caused by urban air pollution than there are by car crashes" ....."the greatest hazard to human health, to lungs and the heart, come from the particles that we refer to as the sub-2.5 micron particles." "these are very, very fine particles of the kind that are particularly produced by diesel engines."

> Radio National (ABC) - Monday 28‘h April 2003
> Summary ;

"exhaust from diesel vehicles is everywhere and is probably more carcinogenic than cigarette smoke - but it’s not regulated like smoking in public places. In fact our tax system encourages more of the stuff. With air pollution shortening the lives of 2000 Australians every year, where’s the "Quit" campaign against dirty diesel in the cities?"
".....As particulate concentrations in the air rise, so do the death rates, from a variety of causes. And that’s not counting those who *suffer* a range of pollutionrelated illnesses."

> Planet Ark : Cleaner off-road diesel vehicles may save 8,500 lives - report. June 11, 2002

"Washington - The Bush administration should adopt tough federal pollution emission standards for bulldozers, farm tractors and other off-road diesel vehicles to prevent 8,500 premature deaths and 180,000 asthma attacks each year, state and local environmental regulators said in a report released yesterday."

A diesel catalyst could also be adapted for fitting into exhaust air stacks such as in the M5 East Tunnel and the proposed Cross City & Lane Cove Tunnels as a method of reducing emissions released to atmosphere.

Appendix D

- Under the OHS Regulation 2001 (as posted on the Workcover web site) includes;

Chapter 1, Preliminary

Public Place- means a public road or any other place to which the public, whether on payment of a fee or otherwise, ordinarily has access.

Premises - included any place, and in particular includes; a) any land, building or part of any building, or b) any vehicle, vessel or aircraft, or c) & d)

Employer - means a person who employs persons under contracts of employment or apprenticeships. **Advice from Workcover is that employers includes all levels of Govt.**

Chapter 1, Division 4 - Atmosphere Definitions: atmospheric contaminant means (a) a hazardous substance that occurs in the form of a fume, mist, gas, dust or vapour, or (b) an asphyxiant, or (c) nuisance dust, to which persons may be exposed in the working environment.

Chapter 1, Clause 5 Meaning of "control" of risks

(1) For the purpose of this regulation, an obligation to **control** a risk to health or safety (in any case in which the elimination of the risk is not reasonably practicable) is an obligation to take the following measures (in the order specified) to minimise the risk to the lowest level reasonably practicable:

(a) firstly, substituting the hazard giving rise to the risk with a hazard that gives rise to a lesser risk,
(b) secondly, isolating the hazard from the person put at risk,
(c) thirdly, minimising the risk by engineering means,
(d) fourthly, minimising the risk by administrative means (for example, by adopting safe working practices or providing appropriate training, instructions or information), (e) fifthly, using personal protective equipment.

(2) A combination of the above measures is required to be taken to minimise the risk to the lowest level reasonably practicable if no single measure is sufficient for that purpose.

(3) Any obligation in this regulation to control a risk by taking specific risk control measures, or by taking specific risk control measures in a particular order, is in addition to the obligations referred to in subclauses (1) and (2).

Chapter 1, Clause 8 Responsibilities held by more than one responsible person

If more than one person has a responsibility with respect to a particular occupational health and safety matter under this Regulation: (a) each person retains responsibility for the matter, and

(b) the responsibility is to be discharged in a co-ordinated manner.

Chapter 2, Clause 9 Employer to identify hazards
Chapter 2, Clause 10 Employer to assess risks
Chapter 2, Clause 11 Employer to eliminate or control risks

Chapter 4, Clause 36 Controller of premises to eliminate or control risks

(1) A controller of premises must eliminate any risk, arising from the premises, to the health or safety of any person accessing, using or egressing from the premises.

(2) If not reasonable and practicable to eliminate the risk, the controller of the premises must control the risk. A controller of premises must ensure

(3) that all measures (including procedures and equipment) that are adopted to eliminate or control risks to health or safety are properly used and maintained.

Chapter 5, Clause 136 Use of plant - registration requirements and particular risk control measures

(3) An employer must ensure in relation to use of plant that:

(m) plant is subject to appropriate checks, tests and inspections necessary to minimise risks to health and safety, and

(n) if the operation or condition of plant presents an immediate risk to health or safety, the plant is withdrawn from operation until the risk is eliminated or, if this is not practicable, controlled.

(4) A reference in this clause to an employer extends to an owner of plant affecting public safety.

Chapter 5, Clause 136 Maintenance and repair of plant - particular control measures

An employer must ensure in relation to the maintenance and repair of plant that:

(1) (f) repairs to the plant are carried out so as to keep the plant within its design limits.

(2) In this clause:

(a) a reference to an employer extends to an owner of plant affecting public safety.

Appendix E
Extracts from and comment on

Productivty Commission 2003, National Workers' Compensation and Occupational Health and Safety Framewoks, Interim Report, Canberra, October

A/
Productivity Commission

"The third national action area is a nationally consistent regulatory framework. It involves

- Monitoring adoption of national standards;
- Reviewing national standards and codes;
- Developing new national standards where need is demonstrated; and
- Repealing superseded regulations."

Comment

As identified by the Productivity Commission that there is a need to have a consistency in approach so as necessary capital costs can be expended with a certainty of compliance throughout the Commonwealth.

It is also necessary that conflicting or confusing regulations between the various States and the Commonwealth be eliminated as national employers have increased compliance costs and the problem of not having uniformity within their businesses.

To date the issue of the various State and Territory bodies continuing to ignore hazards and health risks, identified and acknowledged by them, has an effect on the whole of the environment and therefore results in a direct breach of their responsibilities and obligations as employers.

Compounding the failure to maintain standards that are demanded of private sector employers is the hypocrisy of serving fines and breach notices upon those private sector employers that have deemed not to have provided "a safe working environment".

B/
Productivity Commission

"The Commission recommends the following as principals .....

- Definition of illness and injury .....
- Definition of work-relatedness should be in terms of arising out of or in the course of employment, as used by nearly all jurisdictions;
- Definition of attribution, a significant contributing factor ..... while the major contributing factor would add greater clarity;
- Coverage for journeys to and from work should not be provided, on the basis of lack of employer control, availability of alternative cover and the ability to be dealt with by enterprise bargaining; and
- Coverage for recess .....

Comment

Whilst the coverage of journeys to and from work may be beyond the employer's control in most cases it is clearly evident that health problems directly related to vehicle emissions can be attributed to the inaction of the largest employer - various government and related enterprises.

C/
Productivity Commission

"Injury management is concerned with early intervention,"

Comment

There are significant and growing health costs and issues directly related to the effects of vehicle exhaust pollution and there are options available to reduce the risk and effects. The concept of injury management has been ignorred by those most empowered to take preventative action.

D/
Productivity Commission

Common Law in workers' compensation - Employer liability in tort, Breach of general duty of care, Breach of statutory duty, Employer liability in contract and third party liability.

Comment

Each of the above issues have been defined within the Productivity Commissions document and it would appear that an employee in the course of their duties and subjected to vehicle emissions could suffer illness or death and therefore all employers would appear to be negligent.
Equally it could be argued that under the issues of "third party liability" and claims against a private sector employer these employers would be able to seek damages against the third party with the greatest contributing input i.e. varoius governments or departments.

E/
Productivity Commission

"Strict Liability - Under strict liability there is no standard of care which will allow the employer to escape liability. Irrespective of who is to blame, the employer is legally responsible for all fatalities, injuries or illness arising out of or in the course of employment"

"Negligence - Employers will be laible for damages arising out of their own negligence. To succeed in an action of employer negligence, an employee must prove that the employer failed to meet a standard of care. Courts determine what is a reasonable standard of care by considering evidence of both employers and employees. This is based on a comparison between the cost of reducing worplace harm and the expected benefits."

Comment

Relative to "strict laibility" the defence for an employer based on the statement above would seem to be zero. However, if the current standards are to met by only one sector of employers, even though there is ample evidence of risk, the definition would
appear unjust on those without the ability to take any action.

The issue of negligence pertaining to an employer in the case of illness or death attributed to vehicle emissions would be unreasonable in the case of an employer without control of the environment where the illness was contracted. This would be of greater issue given that the private sector again has no control over the general environment even if aware of the potential risk. This would not be the case for governments that display negligence through inaction.