Action FOR AIR

Proceedings of the
NSW Clean Air Forum

Powerhouse Museum
23 November 2001
**Program**

**Action for Air – the experience to date**
Lisa Corbyn, Director General, Environment Protection Authority

**Action for transport**
Michael Deegan, Director General, Transport NSW

**Keynote address: Innovative State initiatives**
Hon Bob Carr MP, Premier, Minister for the Arts and Minister for Citizenship

**Community perspectives on air quality**
Jeff Angel, Director, Total Environment Centre

**Industry perspectives on air quality management**
Kathy Williams, Chairperson, Australian Trucking Association

**Panel discussion**
Workshop A: Land use planning and public transport use
Chair: Sue Holliday, Director General, Planning NSW

Workshop B: Motor vehicle emissions
Chair: Paul Forward, Chief Executive, Roads and Traffic Authority

Workshop C: Industrial, commercial and domestic emissions
Chair: Lisa Corbyn, Director General, Environment Protection Authority

Workshop D: Maximising health outcomes
Chair: Stephen Corbett, Director, Environmental Health, NSW Health

**List of attendees**
8:30 am  REGISTRATION

SESSION 1  Setting the scene – Action for Air and achievements to date

9:00–9:10 am  Introduction to Forum
- Forum chair: Brian Elton

Traditional Welcome
- Alan Madden
  Cultural and Educational Officer
  Metropolitan Local Aboriginal Land Council

9:10–10:10 am  Action for Air – the experience to date
- Lisa Corbyn
  Director General
  NSW EPA

Questions from the floor

10:10–10:45 am  Action for Transport
- Michael Deegan
  Director General
  NSW Transport NSW

Questions from the floor

10:45–11:15 am  Key Note Speaker – Innovative State Initiatives
- The Hon R J Carr  MP
  Premier
  Minister for the Arts
  Minister for Citizenship

11:15–11.30 BREAK

11:30–12:10 pm  Community and Industry perspectives on air quality management
- Jeff Angel, Director
  Total Environment Centre
- Kathy Williams, Chairperson
  Australian Trucking Association

12:10–1:00 pm  Panel discussion and questions from the floor
1:00–1:45 pm  LUNCH

SESSION 2  Workshops

1.45–3:30 pm

Stream A  Land use planning and public transport use
- Chair: Sue Holliday
  Director General
  NSW Department of Urban Affairs and Planning

Stream B  Motor vehicle emissions
- Chair: Paul Forward
  Chief Executive
  NSW Roads and Traffic Authority

Stream C  Industrial, commercial and domestic emissions
- Chair: Lisa Corbyn
  Director General
  NSW Environment Protection Authority

Stream D  Maximising health outcomes
- Chair: Steve Corbett
  Director
  Environmental Health
  NSW Health

3:30–3:45 pm  BREAK

SESSION 3

3:45–4:45 pm  Plenary – workshop reports

CLOSING  Next steps towards cleaner air and healthy communities
- The Hon R Debus  MP
  Attorney General
  Minister for the Environment
  Minister for Emergency Services
  Minister Assisting the Premier on the Arts
Action for Air - the experience to date

Lisa Corbyn, Director General
Environment Protection Authority

What is Action for Air about?

*Action for Air* is about managing air quality in the Sydney Region.

Surveys were undertaken in 2000 to examine community attitudes on the priority areas for State Government attention. Not surprisingly, education and health topped the list. Five other issues, grouped as having equal importance, were identified as the next important areas. The environment was included in this group. There seems to be less anxiety about the environment now than was the case in 1994, as it seems the community believes that environmental issues are being managed.

When asked, “Over the next few years what is the single most important environmental initiative the Government should undertake?” – the answer was: environmental education. There was also strong support for tougher legislation.

These results confirm the priority the Government has placed on addressing the causes of environmental problems through educational initiatives such as the litter reduction and stormwater campaigns. While water and air issues remain the top priority environmental issues, the community does not necessarily see water and air programs as the single most important initiative. This is possibly due to the Government’s actions to address these issues, therefore reducing the community’s sense of urgency in these matters.

In response to Sydney’s air quality, the most frequent response was that there was little or no change and more people said that it had become worse than better. Community perception about air quality has remained constant since 1994.

Report on Sydney’s air quality

Management of air quality is complex and there is no one simple management response. Different strategies are required to deal with the different sources of pollution and the different stakeholders. *Action for Air* tackles the pollutants of most concern in the Region. These are important because of their potential health impacts.

- **Ozone** – Causes respiratory problems, aggravates asthma, and can lead to temporary decreases in lung function.
- **Nitrogen dioxide** – Causes damage to the respiratory system, increased respiratory infections in children, can increase the effects of allergens.
- **Fine particles** – Causes increased mortality from cardiovascular and respiratory diseases and reduced lung function.

What are the sources of these pollutants?

The main pollutants of concern in the formation of smog are reactive organic compounds (ROCs) and oxides of nitrogen (NOx). In the Sydney region, 49% of ROC emissions come from motor vehicles and 40% from domestic/commercial sources. Seventy eight per cent of NOx emissions come from motor vehicles. However, outside Sydney, industry contributes a greater proportion. Heavy duty and diesel vehicles contribute approximately 50% of the total vehicle NOx.

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<th>Particle emission sources – metropolitan Sydney</th>
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<td>Industry</td>
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<td>Mobile sources</td>
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<td>Woodheaters weekends</td>
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<td>Diesels contribution for only a fraction of the total fleet</td>
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Is air quality improving?

Despite population increase and economic growth, air quality has been improving since the 1980s. Some pollutants have improved dramatically, such as ambient levels of carbon monoxide (CO), lead and sulfur dioxide (SO2). There has been no change in ozone, nitrogen dioxide and particle levels.
Carbon monoxide levels have continued to fall since 1982. This is mainly due to catalyst controls on motor vehicles and the changing composition of the fleet. The number of days exceeding the national standard for 8-hour CO concentration in Sydney has declined since 1996. Lead levels have also reduced mainly due to the introduction of unleaded petrol in July 1985. Since monitoring commenced in the early 1990s, SO₂ has fallen below the national standard of 0.2ppm.

Ozone is more problematic. The national goal is to achieve only one exceedence per year of the 0.1 ppm standard within ten years. Although there is no discernible trend, there are too many days when the level is exceeded. Many of the peaks in ozone levels coincide with bushfire conditions. The main sources of ozone precursors are from motor vehicles. Future strategies will need to focus on reducing the vehicle kilometres travelled (VKT) since there has been a 24% increase since the 1990s.

The national particle standard is 50 micrograms per cubic metre. The standard has generally been met. Summer exceedences are generally due to bushfires and winter exceedences due to hazard reduction burns. Although Action for Air primarily covers the metropolitan area, particle levels are a concern in rural areas during the winter months. This is one of the reasons for a new program on woodheaters that is being implemented in a number of rural areas.

Nitrogen dioxide levels are below the national standard in all three regions.

Action for Air has set out a comprehensive program of ongoing strategies for air quality management across every government department, across industry and the community across a 25-year period. Strategies to better integrate land use and transport planning, improve and expand public transport, make cars and fuels cleaner to reduce motor vehicle emissions, take their place alongside the commitment to continuous improvement in managing industrial emissions.

Our strategies focus on three main areas:

- vehicles
- industry
- ourselves in our homes.

Cleaner cars and cleaner fuel

There has been significant movement on the cleaner cars and cleaner fuel front since Action for Air was released. By 2020 there will be significant reductions in emissions from the motor vehicle fleet due to improvements in fuel and motor vehicle emission standards.

- NOₓ are expected to fall by 71%
- ROCs by 26%
- particles (PM₁₀) by 35%
- CO by 75%
- lead and sulfur emissions are also forecast to fall dramatically – by 93% and 84%, respectively.

Emissions of air toxics such as benzene are expected to halve due to technological and fuel changes.

The management of diesel vehicles has become especially important in recent years as it has become clear that these vehicles contribute significantly to particle pollution. NSW started the push at the national level through the National Environment Protection Council (NEPC) for action on diesel vehicle emissions. A major research program was consequently launched by the NEPC and a Diesel National Environment Protection Measure (NEPM) has now been made. This measure provides a national framework to tackle this problem with guidelines on programs for managing emissions from diesel vehicles.

The NEPM provides the context for new NSW initiatives on diesel inspection and maintenance. The hallmark elements of test and repair of State Transit buses and heavy vehicles will continue the momentum in this area.

NSW has actively participated in the setting of new national fuel standards. The key elements of these standards will be:

- sulfur levels in diesel will be reduced from a current average of 1300 ppm to a maximum of 500 ppm in 2003, and then 50 ppm in 2006
- benzene in petrol will be limited to 1% from 2006 (current average is 3%)
- the fuel additive methyl tertiary-butyl ether (MTBE) will be effectively banned from 2004
- lead will also be effectively banned from 2002 and an alternative lead replacement petrol will be available for cars that currently rely on leaded petrol.

One of the hallmarks of the first two years of Action for Air was progress with the Memorandum of Understanding (MoU) for Fuel Volatility. It was estimated that total hydrocarbons were cut by 35 tonnes per day in the first summer and 42 tonnes per day in 1999–2000. The MoU has been renegotiated and will operate again this summer (2001–02) with renewed commitments by the major oil companies and the independents, including those supplying ethanol.

Load based licensing

An important part of the new EPA regulatory system is the polluter pays scheme, load based licensing (LBL).
Data from the National Pollutant Inventory indicates that 70% of industrial air emissions are discharged by industries included in the LBL scheme. The more you pollute, the more you pay. LBL links licence fees to the pollution load emitted. It gives industry an economic incentive to improve environmental performance. The system rewards good environmental performers. By linking licence fees to the pollution load emitted, it gives industry the economic incentive to improve their environmental performance.

Even before the first load payments were due, several companies introduced cleaner combustion technology and radical redesigns in order to reduce fees and lessen their impact on the environment.

Many EPA licensees adopt cleaner production practices as a result of negotiated pollution reduction programs. Many of these programs have had a positive impact on air quality. Such programs are in place at major industrial sites, including the refineries at Clyde and Kurnell and at BHP at Port Kembla.

There has also been considerable success in promoting cleaner production with smaller businesses. As part of Action for the Environment, the Government has announced a $5 million three-year expansion of the EPA’s Cleaner Industry Program that, through partnership programs, is about changing the culture of the business sector. The $5 million will support new technology and involve the EPA working with local businesses and business sectors to identify problems and prepare cleaner production plans on a dollar-for-dollar basis.

Clean Air Fund

The EPA has set up a Clean Air Fund to help provide local solutions to local air issues. There will be a pilot of second stage vapour recovery systems at service stations to continue to tackle those pollutants which contribute to ozone formation.

The promotion of energy efficiency has also been a major Government priority, with programs targeting homes, business and Government.

Around 30,000 new homes are built in NSW each year and another 25,000 existing NSW homes are renovated. The Sustainable Energy Development Authority’s (SEDA’s) Energy Smart Homes Program is designed to ensure all new homes meet minimum energy efficiency requirements. To date, 63 NSW councils have committed to implementing the Energy Smart Homes Policy. This is a great achievement as these 63 councils have authority over 76% of the State’s residential development applications. Already 37 of these councils have fully implemented the program and this means that at least 53% of all new home developments will meet the minimum house rating requirements.

The Clean Air Fund will also have innovative approaches to reduce particles coming from wood-heaters which are a major contributor to winter brown haze. Tougher standards on new heaters have been brought in and the Protection of the Environment Operations Act 1997 (POEO Act) provides scope for councils to take enforcement action against people creating excessive smoke. Each year a range of education activities is conducted to help people understand how their own behaviour contributes to air pollution.

While the Clean Air Fund – Solid Fuel Home Heater Program starts in rural areas, the RTA will be implementing a similar scheme in areas near the M5 East to reduce background levels of particle pollution as part of the approvals process for construction of the road and tunnel.

Managing the impact of open burning is another piece of the air quality management jigsaw. The Government reviewed and modernised the Clean Air (Control of Burning) Regulation in 2000. The new regulation introduced a state-wide ban on burning tyres, coated wire, paint and solvent containers and treated timber, and establishes three options for managing burning. Councils choose which controls will apply in their areas. All Sydney Metropolitan Councils, for example, have elected to prohibit burning in the open or in incinerators.

The regulation also established a 1 September 2001 deadline for banning domestic high-rise incinerators. We now have one of the most comprehensive air monitoring programs in Australia and the information is now readily and easily accessible electronically.

To improve the community’s access to the information we gather, the EPA has substantially upgraded its air quality website. A detailed 24-hour summary of air quality in Sydney’s Eastern, North Western and South Western regions, and in the Illawarra and the lower Hunter, can now be accessed.

The NSW Government’s blueprint spans 25 years. Things have changed since Action for Air was launched three years ago and they will change again in the future.
Michael Deegan, Director General  
Transport NSW

The following summary of Mr Deegan’s speech was prepared by the Environment Protection Authority from audio recordings made at the Clean Air Forum.

Introduction

Transport NSW has a tough job developing the provision of transport in NSW – particularly public transport. It has a history of about 150 years and a major challenge is to look at the problem in a fresh way. The Department considers the building blocks available and seeks a future course by working increasingly with industry and the general public to bring about reform.

The Department accepts the criticism made by the Director of the Total Environment Centre, Mr Jeff Angel, about how well it communicates and takes up the challenge to improve.

Another change for the Department is to shift its focus from a largely processing function – for example, applications for taxi assistance – to that of long-term planning for the benefit of the people of NSW.

Growth issues

Through long-term planning, the Department is seeking to accommodate expected growth in the Sydney, Newcastle and Wollongong regions. A high-speed rail link and expanded freeways with bus lanes are current goals, but funding remains a major factor in the provision of such services. A greater use of travel and population data will be used to influence funding and change in the provision of public transport. An example of the information being gathered is the figures for work travel to key centres within Sydney.

Exciting developments

In the time Mr Deegan has been Director General of the Department (since 2000), there has been much significant work done to improve public and other transport in Sydney and NSW. This includes:

- $800 million for bus only Transitways, including a dedicated bus link from Liverpool to Parramatta. Its stations will also create and add to community life along its route with shops and other service centres.
- $1.6 billion Parramatta Rail Link. The decision to tunnel under the Lane Cove River is a win for the environment. While the integration of the new service into existing ones is a challenge (especially at Epping and Chatswood) it is being accomplished with strong community input.
- Integrated ticketing, with fare restructuring towards price equity for work commuters throughout Sydney will be the greatest reform for public transport.
- The long-term rail plan has a strong first draft. The next step is to address finance. There will be integration with taxis, hire cars, buses, cars and the rest of the public transport system.
- A new freight strategy is being developed by working with other agencies and community groups. The main aim is to move containers from trucks to rail, with major container ports throughout the State. In particular, a dedicated freight rail link with double tracking will be introduced from Enfield to Port Botany.
- The Special Inquiry on the Glenbrook Rail Disaster is important in that safety is essential to acceptance of public transport and hence, the environment. One major recommendation of the Inquiry was the establishment of a single Train Management Centre to better coordinate the movement of rail traffic throughout the system.
- Service improvements such as regularly achieving 97% of trains running on time, and improvements to the Transport Infoline – that each day provides help to thousands of rail, bus and ferry passengers in resolving problems and planning trips.
- The Australian Rail Track Corp proposed takeover of interstate track in NSW will be decided upon in June 2002. Passenger priority and funding are the main issues to be considered.
Relationships

Relationship building and coordination of transport agencies are the Department’s foundational concerns, particularly in order to integrate planning and transport with regard to passengers and freight.

Because of funding being so crucial to transport activities, a good relationship with the Treasury is essential.

Local Government and residents’ groups can play a very fruitful role in the provision of transport services. A wonderful example is the results of work done with the Hills Transport Action Group to improve services for that area of Sydney.

Industry and business involvement in transport planning will benefit the coordination of city services, especially buses and taxis.

Environmental groups can give similar aid in the city with, for example, consideration of the Cross City Tunnel.

Regional Organisations of Councils are strategically placed to help with transport coordination and decision-making across their areas.

The Minister for Transport, Mr Carl Scully, has instituted a high-level property committee that will examine better ways of utilising publicly owned transport land. It is not intended to sell this land, but to think strategically and bring the community in and around transport corridors and stations.

Finance and governance

A dedicated freight track from the Macarthur area to Port Botany is seen by most States in Australia to be the single most important transport issue for the country. This is because of the nature of Sydney’s dominance as Australia’s greatest growth region. The Department has been able to help the Commonwealth Grants Commission understand this, but increased Federal transport funding will be crucial in affecting Sydney’s business, growth and direction. The Commonwealth Government has promised $350 million to the freight track project and the Department will continue to foster better relations with the Commonwealth Government in order to achieve improved outcomes for the public transport needs of NSW, especially with freight.

In accordance with this dedicated track strategy, a major freight contractor has agreed with the Department to take its loads no further than Minto and to off-load to rail. The Sydney transport system is an extremely complicated mix of passenger and freight trains. The dedicated Macarthur to Port Botany freight track will greatly enhance traffic movements across the whole Sydney transport system, including lowering the numbers of trucks and cars.

The Transport Coordination Committee is working with the community to change public transport, and transport generally, and the way it all works. Dramatic improvements will be developed along the lines of the ‘umbrella-style’ management that worked so well during the Sydney Olympics.

In conclusion, Transport NSW encourages the Roads and Traffic Authority in its development of bus lanes. There is ample scope to expand the use of the current road network for this purpose in order to increase the use of buses across the entire city.
Next month is the seventeenth anniversary of my appointment as Minister for the Environment. The 80s were an exciting time: green issues became part of mainstream political debate. One of the important messages was cleaner air. I am proud to say the Wran Government introduced lead-free petrol and catalytic converters, and banned backyard burning. They were good decisions that caused a fair bit of pain up front, but have been thoroughly vindicated.

Returned to Government in 1995, we renewed our commitment to the environment … and to cleaner air. Three years ago my Government launched Action for Air. We launched it as a 25-year plan because there is no quick fix for the legacy of a century and half’s industrialisation. We gave a commitment to regularly and publicly review how we are doing. That’s why we’re here today.

The good news:
- Air quality is better than it was 20 years ago
- Industrial pollution has fallen
- Newer cars and new fuels are polluting less.

Look at some key facts:
- Sydney’s particle levels are lower than those in similar cities like Toronto, Dallas, Seattle and Helsinki
- Our sulphur dioxide is lower than in London, Leeds and Belfast
- Sydney’s ozone is less than many American cities
- We’ve seen major reductions in carbon monoxide
- We have held the line on the pollutants that cause brown haze in winter
- Sydney’s air meets national standards about 350 days each year
- Lead levels are now well below national health guidelines.

Several weeks ago, my colleague Andrew Refshauge, Minister for Urban Affairs and Planning, announced a new State Environmental Planning Policy on Integrating Transport and Urban Planning. It will direct local councils to make planning decisions that improve the accessibility and the use of public transport, walking and cycling.

Another key element is our ten-year public transport plan. We’re building the Parramatta to Chatswood Rail Link – now in two stages – to add capacity to the CityRail network. We’re buying 181 new train carriages and spending more than $400 million to make Sydney’s tracks and signals more reliable. We’re building 90 kilometres of bus-only transiways. We’re establishing 200 kilometres of cycle-ways each year between now and 2010: it’s a $251 million plan. We’re building nine new transport interchanges in large urban centres, such as Engadine, Gosford and Mt Druitt, under our $42 million Interchange Plan.

That’s more public transport … and more reliable public transport.

I turn now to industry. I commend NSW businesses for the tremendous progress they’ve made in recent years. Under our firm regulatory approach industrial pollution has been slashed over the past decade. We are on the brink of exciting new ways to cut pollution faster and more cheaply. I refer to our new polluter pays system, load-based licensing. It means a company’s licence fees are based on what they pollute and how much. Take Pilkington Glass at Ingleburn, a major glassmaker in south-western Sydney. For many years they’ve been one of Sydney’s largest emitters of smog-forming oxides of nitrogen. With load based licensing, they’ve developed cleaner combustion technology to be implemented at the plant’s next major overhaul. It will cut nitrogen dioxide emissions by 80%. Pilkington also believes it can sell the new technology to other companies. Load based licensing rewards firms that do the right thing.

For all the incentives, however, there will always be firms that cannot totally eliminate emissions. That’s why in Action for the Environment, we brought forward our plan for piloting emission offsets.

Offsets allow firms to reduce emissions by funding emission reductions at nearby sources. Early next year
we will seek public comment on detailed proposals for how these offsets might work. Our anti-pollution laws remain the backbone of the fight against industrial emissions: laws we have recently streamlined and toughened. Under those laws the courts levied fines for environmental offences in excess of $1 million during 2000/2001. Under those same laws, the EPA secured about $400 million worth of environmental upgrades by industry in the past year. Examples include BHP’s $90 million plan to cut dioxin emissions. And Blue Circle Southern’s new dust collection system at their cement factory near Goulburn. Blue Circle has reduced dust emissions by 90%. They’re selling the collected dust, earning the company $130,000 a year.

We are also setting up a Clean Air Fund to support local solutions to local air pollution. Under the Fund we will pilot a method to capture the petrol fumes emitted at petrol bowsers.

Another priority is woodheaters, a major contributor to winter brown haze, especially in regional towns. We’ve legislated for tougher standards on new heaters. We’ve also created a new subsidy scheme to encourage households to replace old heaters with cleaner alternatives. The cleaner the heater, the higher the subsidy. We’ll be targeting towns such as Armidale, Lithgow, Orange and Cooma in partnership with local councils.

I turn now to the major source of air pollution, which I know is of concern to you all, vehicle emissions. People use private vehicles for obvious reasons. They are convenient, especially for families. They are a necessity in country areas and for many businesses. And the wealthier we become, the more cars we own. The result:

- motor vehicles are responsible for two thirds of all smog-forming pollution in the Sydney region
- the average car emits more than four times its weight in carbon dioxide, the major greenhouse gas
- transportation is the third largest and fastest growing source of Australia’s greenhouse gas emissions
- over the 1990s, the number of kilometres travelled by vehicles on Sydney’s roads on an average day increased by one quarter – more than twice the increase in population.

New cars sold in Australia emit much less air pollution today than they did a decade ago. But these improvements are being outweighed by the rapid growth in vehicle use. In addition, the fuel efficiency gains in new passenger cars are being offset by increased sales of large petrol-guzzling cars and light trucks. The Commonwealth encourages this trend through preferential tariff treatment. One in four new vehicles is now a light truck and many are simply used as urban passenger vehicles. Due to loopholes in national standards, some are not even fitted with catalytic converters. Without converters, these vehicles can emit up to 10 times as much air pollution as a regular car.

All this amounts to a big environmental problem. Given that Kyoto or some other international agreement is inevitable, this also amounts to a looming economic problem. When greenhouse emissions are capped – and they will be – vehicle emissions will crowd out industry emissions. Failure to tackle vehicle emissions will cost us jobs and growth. However, car makers who produce better, cleaner vehicles will reap enormous benefits. The Chairman of Ford Motor Company, William C Ford Jr, recently prophesised that fuel cell vehicles would “longer term … finally end the reign of the internal combustion engine”. He portrayed the environmental challenge as an “incredible opportunity”.

I recently went to a Toyota showroom where I saw their new hybrid petrol-electric model, the Prius. It halves fuel consumption and greenhouse gas emissions, and reduces noxious emissions even more. The Prius has been available in Japan, Europe and North America for several years and is now in Australian showrooms. Honda’s two-seat Insight achieves similar results. Using Australian technology, Holden and CSIRO have developed a prototype hybrid vehicle, the ECOmodore, which also achieves major environmental gains. The Prius, Insight and ECOmodore are on show here today.

Throughout Europe, North America and Japan, governments are adopting incentives to encourage cleaner vehicles. For instance, the Blair Government recently restructured vehicle charges to reflect environmental performance. With no clear signals from the Commonwealth, there is little incentive for carmakers to supply cleaner vehicles in Australia. Not surprisingly, there are only a few ‘ultra low emission’ models available in Australia compared with about 40 in the US.

My Government believes that NSW consumers should be able to buy the cleanest, most advanced vehicles available. Our environment deserves nothing less. That is the goal of the five-point NSW Cleaner Vehicles Action Plan I am proud to announce today.

**Point 1**

We will set two environmental performance benchmarks to tell consumers which are the cleanest cars on the market. The top benchmark will only be used by leading edge vehicles. A special logo will identify these vehicles. I’m pleased to be able to unveil that logo today. The logo uses a star rating which is well recognised by the community as an easy way of comparing different products.
The second benchmark will identify models that are significantly above average. The benchmarks will be set by an expert panel convened by the EPA, in consultation with industry and green groups. The benchmarks will commence for model year 2002, and will be revised upwards as technology improves.

Point 2

I come now to the centrepiece of our plan: stamp duty incentives to buy cleaner new vehicles. Early next year we'll release for public consultation a detailed proposal for restructuring stamp duty to reflect the environmental performance of vehicles. This will mean lower stamp duty for cleaner models, with increases for dirtier vehicles.

Our proposal will draw on the lessons of similar schemes in Britain, Germany, the Netherlands, Sweden and Japan. Our plan will be revenue-neutral: it will neither increase nor decrease overall revenue collected from motorists. It will only apply to vehicles first registered after the new system starts: no existing cars will be affected.

Point 3

No Government can talk about emission reductions without looking at its own fleet. We will ensure the NSW Government sets an example. That will include Local Government and other bodies that purchase through the NSW Government Motor Vehicle Contract. About 30,000 vehicles a year are bought through the Contract, about 5% of the entire national market. Many of them are larger cars with high fuel consumption and high greenhouse emissions.

We will require every Government agency to develop a fleet improvement plan. These plans will include quantified targets that represent tough but achievable reductions in total fuel use and greenhouse emissions. Agencies will have to report publicly each year on their progress. The Government will also limit purchases of four wheel drives and other light trucks.

Because the Government sells its fleets vehicles after two years, we will soon see a notable increase in the number of greener vehicles available on the second hand market.

A word also on the State Transit bus fleet. We already have 106 compressed natural gas buses. Under our $120 million three-year bus fleet replacement program we're buying 300 more. We've purchased 210 already. That means around 20% of our bus fleet will be powered by compressed natural gas by the end of next year.

And I'm advised the economics are sound, with a net saving of 30 cents per kilometre compared to diesel.

Point 4

We will support development of the nation's first consumer green guide for new cars. It will help buyers make their car purchase a green purchase. We're already working with the NRMA, the Australian Consumers' Association and the Total Environment Centre on a green rating system for cars and light trucks. We'll invite these organisations – plus the Commonwealth, other States and industry – to work on the green guide as well.

Initially, the rating system will apply to the most popular models and rate the most easily measured environmental impacts. Over time, it will be expanded to cover more models and impacts.

Point 5

We will introduce a voluntary Clean Fleet plan to encourage firms with large vehicle fleets to adopt environment friendly practices. It will be open to both light and heavy vehicle fleets, from company car fleets to transport operators. Participants will buy cleaner vehicles and operate their fleets in an environmentally sustainable manner. A distinctive logo will tell the community which companies are accepting the green challenge. The RTA will develop the scheme in consultation with fleet operators and environmental groups.

Low-vapour petrol for summer

Before I conclude, a word on a key cause of air pollution in summer: petrol vapour accounts for more than half of motor vehicle emissions on a hot summer day. By removing the butanes, we can make the fuel less volatile while not harming vehicle performance. That will remove thousands of tonnes of air pollution from the skies above Sydney over the coming summer months.

Conclusion

To date most governments around the world have simply regulated minimum emission standards. With this five point plan, the Government and people of New South Wales take the next step: making best practice every day practice.

Of course, there's more to be done over the remaining 22 years of Action for Air. We don't pretend to have all the answers. But the Cleaner Vehicles Action Plan is a serious plan that will:

- put more clean new models on the road
- reward innovation by car makers
- reward consumers and firms who take the green option
create new jobs in the environmental technology sector.

The environmental decisions of the early 80s showed we could make the hard choices in NSW and reap long-term rewards. The measures I’ve announced today have the same hallmarks: hard decisions, based on expert knowledge, that are right for the urgent demands pressing upon us. The same might be said of our Action for Air plan as a whole. It’s an investment in the future … a serious, long-term plan that’s already delivering results … but still has a long way to go.

I encourage all of you to make the most of today’s Forum. Together let’s continue to make a difference.
I must say I am impressed by the seniority of people who are attending this Forum and the commitment of time of the Director Generals of major Government agencies that are regulating or not regulating, as the case may be, our air future.

With millions of people in the Sydney–Wollongong–Newcastle region affected by air pollution and escalating health, traffic congestion and other costs – it is time to review *Action for Air*. Released in March 1998, it was described as an ‘air quality blueprint’. The Premier, Bob Carr, said, “My Government has declared war on air pollution – this is the plan to make NSW the world leader in air quality management”.

Excessive use of cars, dirty industry, new public transport, use of cleaner fuels and stricter emission controls were all targeted. While some gains have been made in previous years through the introduction of lead-free petrol, the growth in car traffic and the increasing use of diesel vehicles is not only countering the gains but increasing the amount of toxic particulate pollutants in the air.

The Total Environment Centre (TEC) was part of the official launch for *Action for Air*. We had been working with the Clean Air 2000 Taskforce to highlight the air pollution crisis and participated in intensive negotiations with Government to establish key air quality and traffic reduction targets.

We welcomed the plan, but warned that effective implementation was the key test. We promised the TEC would be an active watchdog.

Our review of *Action for Air* had three objectives:

1. assess progress against targets
2. evaluate new information, and
3. suggest improved targets and programs. In sum there are a few advances but with the most crucial programs, performance is poor.

**The review**

The first thing to notice about *Action for Air* is that it is a ‘25-year plan’. If anything would indicate the scale and magnitude of the challenge it’s the term ‘25 years’, accumulating over quite a lot of electoral terms. It is intended to improve the air of the greater metropolitan area of Sydney, the Illawarra and the Lower Hunter and it does provide a framework – it certainly is comprehensive. But it is a plan that will last a generation, and it is a plan that acknowledges that the people who are breathing air in the lead up to the end of the 25-year term will still be breathing dirty air.

It is a plan for a future generation. As much can be lost in the translation of plan to reality, with bureaucratic and Treasury hurdles, the TEC undertook to conduct a comprehensive review of the State Government’s implementation of *Action for Air* objectives.

Latest information reveals that Sydney continues to suffer from major air quality problems. Both National Environment Protection Measure (NEPM) and World Health Organisation (WHO) goals for ozone (the major indicator for smog) are exceeded, with alarming levels recorded last summer. Fine particle pollution remains a problem in winter and summer.

Diesel vehicles make a disproportionate contribution to emissions of fine particles and NOx. Despite accounting for only 15% of VKT in Sydney, diesel vehicles produce up to 80% of total suspended particulate (TSP) emissions from vehicles (EPA, 1998a). Inhalation of fine particles (those under 10 microns or less in diameter, referred to as PM10) has been closely associated with health effects. These include increased mortality from cardio-vascular and respiratory diseases, increased hospital admissions for chronic obstructive pulmonary disease and heart disease, reduced lung function in asthmatic children and increased respiratory symptoms in school children. Research indicates that particles with a diameter of 2.5 mm or less (PM2.5) are particularly serious as they can penetrate deep into the lungs. Some studies indicate that these particles are most closely associated with health effects.

The disproportionate contribution of diesel vehicles to fine particle and NOx emissions is set to increase in the future. In 1995 diesel vehicles comprised 8.3% of the national vehicle fleet. This is expected to grow to
at least 15% by 2015. Distance travelled by the
Australian diesel fleet is expected to increase 134% 
nationally and at least 146% in metropolitan areas so 
that in 2015 diesels will constitute 22% of total of 
VKT (NEPC, 2000). So, that’s another reason to keep 
Action for Air under review.

Millions of people are exposed to the pollution, 
causing a range of respiratory problems and increased 
mortality. It is a major public health scandal that so 
many people are breathing dirty air.

While a 25-year plan cannot be expected to 
achieve its goals in three years, nor will it attain 
longer term objectives if the foundations are not 
firmly in place. Poor air quality results over recent 
years, particularly for ozone, indicate that Action for 
Air faces very significant challenges.

Foundation policies have not been implemented. 
Two areas in particular stand out – continuing rapid 
growth in VKT and poor progress in implementing 
Action for Air commitments to improve public transport. 
Continuing rapid growth in car use is also under-
mining the benefits of cleaner vehicles and fuels.

It is not enough to say, “We are holding the line 
on air pollution” (and we would dispute this 
particularly in view of the growth in diesel emissions 
which presents a whole new set of toxic air 
pollutants). The fact is that Action for Air was more 
than just holding the line, it was about recognising 
that we have major problems that must be reversed.

Air pollution has consistently been a top concern 
for the community. It is a major public health and 
environmental issue fundamental to the achievement 
of a clean and green city.

A major strategy of Action for Air aims to provide 
better public transport. This is the key to achieving 
VKT targets set out in Action for Air. VKT continues 
to outstrip population growth. This is largely a result 
of inadequate public transport and an emphasis on 
road building.

This approach is out of step with public opinion. 
A 1999 study by the Warren Centre (Glazebrook, 
2001) revealed that 71% of Sydney residents 
surveyed favoured improved public transport over 
building more toll roads as the solution to traffic 
congestion. Of those surveyed, 73% believed there 
was not enough investment in Sydney’s public 
transport, compared with 52% who believed there 
was insufficient investment in roads. Only 14% 
support more investment in roads at the expense of 
public transport, while 70% would support increasing 
spending on public transport at the expense of the 
road budget.

Perhaps this is a challenge to the political myths 
that we have in our society. A government that spends 
more on public transport, and admits that it diverts those 
funds from the road budget, would, I suggest, be very 
popular.

We are discussing the results of our Review with key 
unions, and the Australian Services Union, NSW Teachers 
Federation and NSW Nurses Association in particular have 
asked us to convey their support for its recommendations.

One other area that the Government has overtly 
failed to perform on is a request we made six months 
ago that the EPA obtains more power over carbon 
dioxide emissions from industry as part of a way of 
implementing our Kyoto protocol undertakings. It is 
pretty amazing that there is little regulatory control on 
one of the biggest polluters in quantity terms and one of 
the biggest in global climate concern that we have.

The reason we need a major overhaul of Action for 
Air can be clearly seen when you look at the National 
Environment Protection Measure goals and, as when Lisa 
[Corbyn] put up her slide, it said, “For the current health 
goals accepted by the NEPM that in 10 years time there 
will be one day’s exceedence per year”. Now I don’t 
think anybody in this room thinks we are anywhere near 
confident enough about achieving the NEPM objectives 
let alone some of the tougher ozone objectives that were 
in Action for Air. So, we need to do a lot more.

We have a number of key recommendations. But I 
have to say right at the beginning that the critical mass 
for achieving NEPM or Action for Air objectives is a 
massive increase in public transport. We can have all 
these other strategies. We can have cleaner cars and 
cleaner fuels. We can have better data and better 
modelling and various other arrangements. But unless the 
urban fabric of Sydney is addressed then it will keep 
generating air shed problems, no matter what 
technological solutions might come along.

It is clear that a major overhaul of Action for Air is 
needed to improve progress in meeting commitments 
and reaching air quality goals.

Key recommendations

- Bring forward capital works on major public transport 
  initiatives to increase capacity and service levels, for 
  example, the Parramatta to Chatswood, Strathfield to 
  Hurstville and north-west Sydney rail links, and the 
  turn around loop at Bondi Junction. It is our strong 
  belief that construction on at least these projects 
  should begin by 2005. This puts public transport and 
  air pollution well and truly on the agenda for the 
  2003 State Election.

- Promote increased use of rail for freight transport. 
  This should include a program to dramatically 
  improve tracks and signalling.
Finalise the Performance Assessment Regime (PAR) to improve private bus company service standards.

Improve CBD public transport by constructing CBD light rail extension prior to cross city tunnel. Complete feasibility study of extension to Ashfield.

Promote light rail as transport in other parts of Sydney including Bay Light Express proposal. Prevent sale of University of NSW land, which would block development of the system.

We want the actual cost of the tollways properly recognised, not only in terms of the money people are paying at the tolls, but the fact that the air emissions from these facilities are not being factored into the cost by the failure to install electrostatic precipitators to filter emissions from the M5 East tunnel, for example, and probably the Lane Cove Tunnel and the Cross City Tunnel. The fact is that the dirt that people will be breathing from these tunnels – their loss of health – is in financial terms a subsidy to car travel.

Introduce integrated ticketing to make public transport easier to use. Extend concessions for Government buses to private buses.

Finalise metropolitan parking strategy. Remove parking space levy exemptions for retail shopping centres.

Introduce an inspection and maintenance program for in-service vehicles. Immediately call for tenders and select sites for the network of privately run testing facilities. Provide a clear timetable for the commissioning of these facilities and expansion to lower Hunter and Wollongong. Fast track development and implementation of an inspection and maintenance program for in-service diesel vehicles.

Press Commonwealth and State Governments to implement Euro 2 and Euro 3 standards for new vehicle emissions and fuel, ahead of current slow timetable.

Continue support for Western Sydney Natural Gas Vehicle Project. Promote increased use of CNG vehicles by Local Government and private bus companies. Provide funding and assistance for development of more CNG refuelling infrastructure.

Use some funding from recently announced $5 million enhancement to the Cleaner Production Program to introduce pollution reduction programs for businesses identified as having potential for reactive organic compound (ROC) emission reductions.

Include metropolitan Sydney in areas to be immediately included in $6 million Clean Air Fund program to assist owners of old woodheaters to upgrade to cleaner technology. This scheme should be modelled on the program formerly operated by Armidale Council.

There should be continued implementation of the Energy Smart Homes Program run by SEDA so that more councils progress to full implementation. It is a very staggered process and only a minority of councils have actually signed up to the full implementation stage. A lot are at the middle way, but that does not get you very far.

All of these things will inevitably cost a lot of money. But that just reflects the way the funding priorities – both private and public investment – have established an unsustainable city that is causing serious air pollution. Unless we address a quantum change in those funding priorities then the outcomes for Australia’s biggest and only international city will not be good. Sydney is a very wealthy city, and we should be able to do that in the twenty first century.

In the lead-up to the Forum the Government did make some key announcements. Two in particular stand out.

The first was the proposed SEPP on Integrating Land Use and Transport. This is, of course, directed at the urban fabric of Sydney and changing the nature of Sydney so that its ecological footprint is far more benign. Its concept is good but its detail is unfortunate because of the thresholds to which the particular SEPP will apply. It applies to such a high threshold of development that very few of the developments that local councils and neighbourhoods see in front of them will actually be impacted on by this new SEPP. So while this public exhibition process is undergone we need to change those thresholds so that the good principals that are in that SEPP actually do apply to much more of the developments that occur in Sydney.

The second major announcement that the Premier just made was the issue of stamp duty. Now the fact is that no matter how clean or dirty the cars we have on Sydney streets, we will still have traffic congestion. But the importance of his announcement is that it is the first clear use of taxation policy to encourage better environmental outcomes. And that was a very significant breakthrough for Sydney to make. If the GST had been adjusted to be more of an environmentally informed tax regime then we would have even better signals going out to the economy about the types of things that should be done to improve the environment.

But as I said, it is the key problem of getting to our critical mass of public transport funding. Sydney is a big city with serious drivers inside it that produce bad air quality and bad transport efficiency. We need those massive changes in the coming years in government
and private expenditure to massively increase public transport.

The results of our Review of *Action for Air* do not augur well for the air we breathe. The investments we make today will take time to have effect and will determine the quality of the air in the next two decades. Efforts should be redoubled. We will have only one chance to give the millions of present and future residents in the region a clean air future.
Industry perspectives on air quality management

Kathy Williams, Chairperson
Australian Trucking Association

The Australian Trucking Association (ATA) is the national voice for the Australian trucking industry. The industry’s part in the 25-year Action for Air strategy is clearly set out in Objective 3 of the Action Plan:

Objective 3: Make cars, trucks and buses cleaner
- reduce car emissions
- reduce diesel vehicle emissions
- promote cleaner fuels

Action 3.6 Emission standards
Advocate tighter national emissions standards for heavy-duty diesel vehicles:
- low-sulfur diesel – 500 ppm by 2002
- ultra-low-sulfur diesel – 50 ppm by 2006
- Australian Design Rules – Engine Emission Standards
- Euro 3 or USEPA 98 by 2002/03
- Euro 4 or US equivalent by 2006/07.

These standards will, with the introduction of new fuel standards, see a significant impact on diesel emissions. These are new vehicles and the emissions benefits will only accrue when they are on the road, but they will provide an equivalent emission performance to alternative fuels in most freight sectors. These vehicles – 4.5 tonne and above – are expensive, have a long life and require a reasonable investment horizon for trucking operators to renew their fleet. This is an area where obvious emission benefits can be gained by using investment incentives to move trucking operators to clean diesel and alternative fuel technologies.

Action 3.7 Develop a National Environment Protection Measure (NEPM) for diesel vehicle emissions

The ATA has expressed concerns about the NEPM, in particular its practicality in regard to establishing in-service emission standards for pre-1990 vehicles, and concern that States will adopt different approaches to addressing diesel emissions with obvious repercussions to a national industry. However, the NEPM provides more opportunities than threats if adopted in a national and consistent manner. The NEPM itself has identified that 90% of the diesel emission problems can be addressed by focusing on 10% of the light commercial fleet’s maintenance. In-service maintenance is the key, if not the most significant means of addressing air quality concerns with diesel emissions and at the same time delivering improved roadworthiness. In trucking, fuel is our primary cost of operation. Up to 25% to 30% for the long distance sector. The trick is getting people to understand that there are savings in being green.

The Diesel NEPM promotes audited maintenance programs as an option for State Governments to adopt. The ATA believes that an audited maintenance approach will deliver the best environmental outcome. Other initiatives outlined in the NEPM to address diesel emissions are:
- smoky vehicle programs
- testing and repair programs
- diesel vehicle retrofit programs
- diesel engine rebuild programs.

The ATA believes all of these have merit and should be used as alternatives for those not willing to participate in an audited maintenance program and as an incentives based scheme to encourage improved environmental performance. For example, if you are participating in a recognised audited maintenance system, applying a catalytic converter might attract a vehicle registration discount or rebate on purchase. If not, you pay a premium.

Action 3.8 Design an inspection and maintenance program for diesel vehicles

The ATA is of the view that the current Smoky Vehicle Enforcement Program is inadequate, unscientific and probably unfair in dealing with diesel vehicles. Researchers involved in the development of the Diesel NEPM recognised as much. The ATA is also of the view that a full-blown diesel emission inspection regime is not possible or practical for a variety of reasons. There is a need for a readily available test and facilities for those
operators wishing to utilise them. Regulators need to establish a base test at which vehicles can be benchmarked. The problem is what outcome are we seeking from testing? The only way to deliver a 365-day-a-year outcome is to have in place an auditable maintenance system that has regulatory acceptance and allows clear delineation and benefits between those who are in such a maintenance program and those who are not. Limited enforcement resources could then be more targeted toward those not in the audit based system – the real offenders.

From a heavy vehicle perspective, one idea worth considering for testing is the used truck dealerships and existing industry business structures in order to take the environment to the people. This could be simple initially, having all heavy vehicle workshops work to a minimum set of environmental maintenance standards for all vehicles, which include preferred customer status to those involved in an audited maintenance program.

The ATA’s TruckSafe accreditation program has provided much guidance and experience over the past ten years on how these programs work and where the pitfalls are.

There is an opportunity for a real, joint industry/government initiative to lead Australia. The opportunity is the Environmental Management System (EMS) developed by the ATA.

The EMS has been developed to be a fully audit- able program based on ISO 14002, but with standards, practices and procedures developed specifically for the trucking industry in the areas of:

- emissions (including signing a Greenhouse Agreement)
- noise
- waste and disposables.

**Action 3.9 Ensure cutting edge emission technology for the State bus fleet**

The bus fleet will equally benefit from the ATA EMS.

**Action 3.10 Support research to identify effective emission control strategies**

There is scope to use the ATA EMS as the base information source to measure and benchmark emissions performance as well as improvements in the heavy vehicle fleet. The joint diesel initiative (Diesel NEPM and EMS) could, for example, form the basis of a major case study to be promoted internationally as best practice in addressing heavy vehicle diesel emissions.

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**Other initiatives**

1. **Providing more and better transport choices**

The smooth transition of freight through built up areas will provide huge emissions benefits.

2. **Mass limits review**

This reform is five years old and not yet introduced. Mass limits provide vehicles with increased mass – if they use a technology called road friendly suspensions. This allows vehicles to move from 42 to 45.5 tonnes without causing any increased road damage.

   The other obvious effects are one in 15 semitrailers effectively are no longer required and vehicles are being utilised to their full potential providing significant emissions benefits.

3. **Performance-based standards**

Performance-based standards offer a move from prescriptive regulation of vehicle dimensions to a performance-based approach allowing for innovative vehicles to be allowed access to urban areas.

4. **Intelligent transport systems**

The computer and electronic age provides great opportunities for environmental gains within the trucking industry. Both on-board and off-board technologies provide opportunities for traffic management and route selection by companies and time efficiencies through removal of delays at pick up and drop off points.

5. **Planning and access**

One of the big issues for trucking is planning and access, particularly but not only in urban areas.

6. **Proposed Energy Credits Scheme**

The ‘on-road’ diesel grant was proposed by the Federal Government as part of the tax reform process. The grant was to be provided originally to all vehicles above 4.5 tonnes. The new grant developed with the Democrats is the Energy Credit Scheme commencing July 2002. The Democrat intervention places an environmental focus or policy intent within the proposed Energy Credits Scheme. There is no reason why the two policies cannot work in harmony. The argument that price differentials will determine usage cannot be sustained for the trucking sector at the moment.

Even with the price differentials and incentives that existed prior to the grant, and today in regard to alternative fuels, the technology has not proven itself to be either economically or environmentally viable from the marketplace perspective.
The diesel grant provides valuable economic support for the entire country and is not diametrically opposed to sound environmental policy. In fact, it provides a unique opportunity to align Federal fiscal policy with state environmental programs through the NEPM.

It’s just about getting the package right.

The ATA looks forward to working with you in the interests of our children’s environment.
Panel discussion

Panel members

Steve Alchin, Executive Director  
Master Planning and Infrastructure  
Transport NSW

Jeff Angel, Director  
Total Environment Centre

Lisa Corbyn, Director General  
Environment Protection Authority

Kathy Williams, Chairperson  
Australian Trucking Association

This is a summary of the discussion by panel members and delegates, arranged according to the main issues raised.

Challenge of increased VKT

*Action for Air* includes the two goals of achieving a plateau in VKT and, then a reduction in VKT. But this has been made difficult due to increased vehicle use. People choose to use cars for reasons other than merely transport, eg to enjoy music, conversation, comfort, privacy, safety. Personal behaviour and how it translates to VKT thus need more detailed analysis.

Improved computer modelling is starting to show various scenarios of land use and transport planning and how they relate to VKT, travel times, speeds, etc. They will become tools that indicate possible outcomes and will also inform the continuing debate.

Policy and strategy development is important, eg the Government's Integrating Land Use and Planning package. For instance, according to the Household Travel Survey, approximately 68% of trips by residents in the St George area are to destinations within the LGA, that is they consist of short trips by residents within their local government area. This shows the importance of councils and local planning, coupled with the role and influence of Planning NSW and the transport agencies.

Regional government could aim for a better balance of transport modes by introducing incentives for walking and cycling and disincentives for car use. This would enhance local health levels associated with human mobility: health as a transport related issue is broader than just air quality.

The local ‘short trip’ view of car use mentioned above was challenged with the statement that excess air pollution was still mostly caused by the morning and afternoon peaks of work commuting. The short trip view was seen as a distraction from the requirement for better public transport.

Interest in major project development, eg northwest rail line, must be kept alive.

There was a call for better education of the community on how to use public transport, which would lead to an increase in its use.

Transport funding and pricing

The magnitude of public transport capital costs requires the continuation of debate on methods of funding and pricing. The need for such a debate was widely supported and seen as a crucial starting point towards progress in the transport debate generally. Various forums were suggested, including State and Federal elections, and the current Commonwealth Fuel Taxation Inquiry.

The community should not be afraid of a debate on the ‘user pays’ philosophy as it applies to road use. It has already been dealt with in NSW regarding issues such as load based licensing. There was a view that the public would not mind increased costs if they knew the funds raised were to go to improving public transport.
The advent of greenhouse emission limits will lead to related pricing policies, which is a good starting point for considering broader environmental pricing issues. The challenge, though, is for the Federal Government to lead the discussion.

The phenomenon of an ‘umbilical cord’ linking funding, whether State or Federal, with an emphasis on road provision was criticised. ‘User pays’ was seen as the best avenue for funding, but was acknowledged as politically difficult. Thus the need for openness and political support for the debate.

The community needs to realise that a cleaner environment will cost more; not only with fuels, but also with vehicles.

Funding becomes complicated by the fact that over the years the fraction of the Government budget has not increased due to the Government’s other responsibilities, but the cost of providing roads has increased to about $150 million per kilometre. Additional sources of funding include developers and private contributions (tollways).

A trap regarding private funding of roadways was highlighted in that tollways as a business encouraged the greater use of cars. If the road is seen as a business, increased use of private vehicles and VKT were a desirable outcome. This reveals a tension for government as to what is seen as ‘good’ for the community.

Externality need to be included in calculating the cost of road use and in conducting the funding debate. Pricing must be equitable, regardless of vehicle type (car or truck).

At present, the costing of transport is skewed and does not take account of externalities. So far, only the cost of damage to roadways has been used to assess the tax load on road users. The damage to the air shed should also be considered.

**Social equity of pricing**

Funding issues led to the consideration of equity in the impact of fundraising. Commuters who were relatively well off were seen as able to pay any price for fuel, roads, cars or parking and were unlikely to be affected by increased user costs. On the other hand, less well-off commuters, particularly in western Sydney, are forced to use more fuel and the new tollways, having no other choice of transport than their private vehicles. The result is increased financial burden on those less able to carry it and no decrease in car use, traffic congestion or exhaust emissions.

The equity aspect of the debate on pricing should also include the equity of the impact of air emissions, eg, lead affects some segments of the community more than others.

All sections of the community should be assured a share of the benefits of the distribution of funding.

**Parking supply**

The Government’s parking levy was supported, but thought to be largely unnoticed by the community.

Due to financial incentives affecting only poorer commuters, it was suggested that the only effective way of curbing car use was to actually decrease the number of parking spots. The effectiveness of this strategy was seen during the Sydney Olympics when parking was heavily restricted and public transport greatly increased. However, while such strategies are easy for travel to the CBD where public transport abounds, it is much more difficult to arrange for the suburbs.

**Outcomes rather than technologies**

Cleaner fuels and better technology will contribute to improved air quality.

Too often, though, the discussion focuses on these aspects, when the real issue is air quality outcomes, regardless of how they are achieved. For example, Euro 4 criteria for diesel fuel will make it a cleaner fuel than CNG, despite CNG being seen as the more modern, ‘better’ fuel.

**Total life cycle cost/benefit of conventional and alternative fuels**

The total life cycle cost of various fuels was raised. For example, while diesel has a financial and environmental cost from drilling, transport, refining, transfers and leakages, CNG is sold, essentially, direct from drill head to bowser. The occurrence of CNG leakages was not mentioned, but was described as having ‘well-to-vehicle’ cleanliness. This life cycle issue would become increasingly relevant for governments as Euro 4 limits made the difference in vehicle emissions between CNG and diesel less marked.

It was stated that the benefits of CNG for vehicles over 4.5 tonnes were not yet proven. But such proof may be obtained with further research.
Clarification/confirmation of issues which require action in this area

1. Health benefits of sustainable transport.
2. Separate needs of pedestrians and cyclists.
3. Managing parking supply seen as an important element in managing travel demand.
4. Over aggregation of data tends to send wrong message. Disaggregation of transport and air quality data by sector is needed to mount arguments to support public transport across NSW.
5. VKT growth rate – greater than population growth.
6. VKT growth is greatest for the following types of travel: social, serve passenger, education, especially via an increasing number of short trips.
7. Increasing non-work related travel, especially on weekends.
8. Travel growth is being experienced together with workforce change and greater economic activity and affluence.
9. Growth in car ownership is also occurring.
10. Information and Communications Technology (ICT) jobs appear to have a high mode share by car.
11. Effects on transport of changing retail and business hours and telecommuting.
12. Providing more accessible development is an important element in reducing the need for and amount of travel.
13. Pedestrians and footpaths – respect for pedestrians and cyclists needed as much as for public transport and travellers.
14. Specify results sought in planning – provide complete plan.

Strategies that are working well

1. Relationship between train use and urban consolidation.
2. Success in slowing sprawl. (Lower proportion of new housing in new outer suburbs.)
4. Growth in train travel in Sydney is faster than that for VKT (especially inner Sydney).
5. Trains being used for commuting and other purposes more often in inner Sydney.
6. Support for centres – supporting community investment in their transport infrastructure and services.
7. Mixed-use development in centres to combine travel destinations.
8. More people are living/working closer to rail/transport hubs.
11. Application of transport accessibility criteria in defining areas for future land release in the Urban Development Program.
12. Street parties – supporting neighbourhood pride, interest and responsibility.
13. Encouraging cycle events and the role of community activism in promoting the status and role of active transport modes.
14. Speed limits and safety.
15. Stanhope Gardens is an example of a transit-oriented development – an accessible, more connected development (pedestrian and public transport friendly centres).

Areas to focus future effort

1. Early education to prevent car-driving habit.
2. Integrated Land Use and Transport Strategy plus implementation of infrastructure.
3. Need footpaths on all/more streets.
4. Travelsmart programs (similar to the Western Australian initiative) – linking of trip purposes.
5. Funding – new, better ways, with community recognition.

6. Reasons why children are being driven more – safety, school placement policy.

7. Integrated land use and transport at a local scale – improving neighbourhood accessibility.

8. Setting maximum parking – not just minimum.

9. Retrofitting accessibility.

10. Link pedestrian footways.


13. Interchanges not friendly to cyclists.

14. Speed limits need to be lower.

15. Potential of teleshopping to reduce trips.

16. Shopping linked to leisure.

17. Greater use of transit lanes.

18. Zero parking where there is good accessibility was raised as an idea going beyond the notion of setting maximum parking provision limits. For example, Sydney Olympics and Sydney CBD.

What sort of additional action is required in these areas?

1. Bike and pedestrian planner in every Council (PlanningNSW has coordinating/resourcing role).

2. Commonwealth funding of sustainable transport.

3. Clean Air Forum to annually review progress of Action for Air.

4. Specify objectives and cost/benefits overall (re air quality and transport).

5. Review of Action for Air and Action for Transport.

6. RTA need to be involved.


8. More model car-free developments, eg North Eveleigh and Ultimo/Pymont.

9. Need to set lower thresholds to ensure more development is caught by the Integrated Land Use and Transport SEPP.

10. Evaluation of progress is important to check progress in managing travel demand.

11. Need to establish time targets. For example, by November 2002 let’s ensure that all State Government agencies have transport access maps to assist visitors in making transport choices.

12. Need to plan for better accessibility to child care facility in centres (for work or shopping).

Roles and responsibilities in relation to future initiatives

1. Need to ensure that State Government acts as a model citizen and practises what it preaches in terms of accessible locations and reducing travel demand.

2. Redirection of budget to sustainable transport.

3. Need interest and clear role for the Commonwealth in funding/planning urban transport.

4. Tax policy and fiscal instruments in line with sustainable transport.

5. Suggestion to fund activism by Government (grants to community champions of sustainable transport).

6. Fringe Benefits Tax (Commonwealth) sends wrong signals – need to ensure that tax system does not encourage unnecessary car use – packages should reward sustainable transport use or less travel.

7. Commonwealth tariff for four-wheel drive vehicles is too low – encourages diesel use.

8. Need to better capture and take account of the externalities of road projects in contrast to public transport projects – review method by Treasury in economic appraisal.
Workshop B: Motor vehicle emissions

Chair: Paul Forward
Chief Executive, Roads and Traffic Authority

Summing up

Jon Real, Commonwealth Department of Transport and Regional Services talked about the new emissions standards and new fuel standards. These tighter emission limits and tougher emission tests, in combination with tighter fuel specifications will deliver lower total fleet emissions. The new European standards deliver benefits in significantly tighter NOx and fine particle limits. European tests are also more demanding than current Australian Design Rule (ADR) on key emissions of hydrocarbons and NOx.

But how do we encourage low emission vehicles? There has been traditional reliance on minimum standards via ADRs, and these have been effective in delivering air quality benefits. There has been less success to date on fuel consumption, with a reliance on voluntary schemes. Do we need to do more in regard to consumer information and incentives? An informed consumer, plus incentives for low emission vehicles (LEV), could offer accelerated uptake of improved technology in relation to conventional, hybrid and fuel cell vehicles. We could gain earlier delivery of benefits in air quality and greenhouse gas reductions, which would support international commitments on greenhouse gases while spurring local industry to become internationally competitive.

We could do this via Green Vehicle Guides, produced by governments and private organisations. The preference is for web-based information.

Incentives could target the consumer/owner. This triggers manufacturers’ responses to demand. There are two main targets: purchase of new low emission vehicles, and improving existing vehicles. Performance-based taxation incentives are often used for new vehicles, while subsidies or rebates are used for existing vehicles. There is also a need for incentives for ‘cleaner’ fuels.

Graeme Marshall, Atmosphere & Sustainable Transport Branch, Environment Australia talked about our current reasonably good urban air quality, but with the increasing VKT and increasing volume of diesels, the situation may deteriorate. The Fuel Quality Standards Act will reduce pollutants and emissions from fuel use; facilitate adoption of better engines and emission control technology; and allow for more effective operation of engines.

Australian Fuel Standards now harmonise with European standards unless there are specific reasons for variation. Issues on the agenda are operability standards, LPG, ethanol content and the Commonwealth Fuel Taxation Inquiry.

Bruce Dowdell, Manager, Vehicle Emissions Management, Roads and Traffic Authority showed that all cars are not equal in terms of their compliance to the ADRs with many very much cleaner than currently required. Exhaust emissions will be determined by the original design/durability, distance travelled, maintenance frequency and quality, tampering, modification, and fuel type and quality.

Our knowledge on in-service emissions is informed by the National In-Service Emissions (NISE) Study, US experience, European Study, and NSW experience and the Diesel NEPM. These show that:

- ADRs do affect in-service emissions, and
- the challenges are to:
  - find the few high emitters
  - target modifications and tampering
  - monitor durability of emissions controls
  - promote more effective maintenance, and
  - promote audited maintenance for diesel vehicles.

Tim Eaton, Senior Project Manager, National Road Transport Commission spoke on the implementation of the Diesel NEPM. Poor maintenance causes emission problems, tampering causes emission problems and emission problems are easily identified and repaired. There are five NEPM strategies: testing, audited maintenance, smoky vehicle programs, retrofit and rebuild. The NEPM also includes education, including training for key personnel and demonstration projects. It calls for industry programs and incentives, primarily taxation incentives, but also access incentives.
We need to identify industry training needs, areas of expertise in industry, existing mechanisms and structural trends in industry maintenance practices. Maintenance should be out-sourced to the original equipment manufacturers. Random versus annual checks with built-in emission checks are preferred, with audited systems to include the development of an emissions module under the National Heavy Vehicle Accreditation Scheme. We need to encourage industry programs, for example, \textit{TruckSafe} by assisting with the environment module.

In conclusion, we should focus on training, build-on or support existing systems and programs and create demonstration projects.

\textbf{John Stott, Chief Executive Officer, State Transit Authority} presented the natural gas bus story. State Transit is the largest natural gas vehicle (NGV) operator in Australia, with 300 buses in operation. All buses are purchased and warranted from the manufacturer as NGV only.

The natural gas buses are clean with reduced visible and audible emissions. Recent testing has proven emission reductions have been realised. The buses are efficient – current desktop studies show a saving of over 30c per bus kilometre travelled. Natural gas is sustainable with known reserves for over 80 years in Australia. The State Transit natural gas fleet is increasing by seven buses per month.

State Transit will continue to use NGVs. However, they do not intend to retrofit natural gas to any buses in the current fleet. State Transit has tested diesel blends and electric buses and neither were as successful as NGVs. LPG has not been tested as the fuel is heavier than air and does not suit the workshop environment.

A subjective assessment of the issues raised in the Workshop B must include:

\textbf{Policy}

Issues of emissions from private vehicle use versus public transport were raised. The funding of the different modes brought up the topic of user charging regimes.

The unique Australian conditions on certification, especially for alternative fuels, were also raised.

Competitive disadvantage caused by new standards and the need to extend the DAFGS and spare parts certification was also an issue.

\textbf{Education – community}

While the ‘It’s a Living Thing’ advertising campaign refers to walking instead of taking short trips in the car, more needs to be done to explain the causes of emissions, and externalities associated with vehicle use, particularly the health impacts. A fully informed community is needed before there can be any informed debate on user charging regimes.

Also needed are more messages on the emissions caused by short trips, importance of maintenance, and trip planning.

\textbf{Education – industry}

Truck registration and fuel tax issues were raised. Since the externalities associated with heavy vehicles are unknown to the community, there is a belief that current charging regimes pay for any additional costs, when this is not the case.

\textbf{Incentives}

Incentives to expedite the uptake of cleaner vehicles and fuels are needed.

\textbf{Diesel vehicle emissions}

It was acknowledged that programs proposed for implementation of the Diesel NEPM are focusing on ‘soft targets’ (Government bus operators and the organised trucking sector) and that the challenge remains to develop programs for light duty commercial vehicles, one of the worst polluting sectors of the diesel fleet.

\textbf{Research}

Research on behavioural issues associated with private vehicle use was also raised. This would allow better targeting of education programs.

\textbf{Partnerships}

There is a need for more and closer government/industry, community/government, and manufacturer/refiner partnerships.
Significant issues at the site include:
- odour from the coke works
- materials handling at the steel works
- dioxin and total suspended particles from the sinter plant.

Complicating factors in dealing with the BHP plant:
- supplies an international market
- significant local emitter – PM_{10}, NO_x/SO_x
- buffer to adjacent housing eroding
- changing community expectations – everybody used to have somebody working at the steelworks – more community groups
- with more contractors on site, issues of scope of control.

Regulatory context for the EPA:
- Protection of the Environment (Operations) Act; hazardous chemicals; contaminated sites
- licence – 80 pages – limits; operating conditions (93 stacks); monitoring and reporting
- liaison meetings – daily interactions
- annual returns – performance against licence
- compliance audits
- enforcement actions

Tools used by EPA to manage impact of the BHP operation:
- Pollution Reduction Programs (PRPs) – useful tool – five year programs – set goals and review performance, for example, sinter plant $92 million program – dramatic reduction in particles and lead
- load based licensing – starting to have effect – BHP has one of the largest emission loads and therefore licence fees
- load reduction agreements – an opportunity to reduce emissions, fee exemptions – if works do not achieve result, still liable to fees;
- licence review – every three years
- public register – all licences available, as well as summaries of performance – community review.
Impact on BHP:

- greater accountability to the community
- compliance with consent conditions – community more cynical about what they see in reports
- responsiveness to complaints – BHP built some trust – other entities
- regular community meetings
- triple bottom line – local people are now shareholders – performance an issue for share price
- third party actions – nuisance or damages.

Discussion

There was concern expressed about a shift away from managing impacts on a scientific basis, to one of subjective/complaints based regulation, for example, as relates to odour. If the community was against an industry with a large number of complaints being made, the resultant degree of regulation may be out of proportion to the real impacts.

There was discussion about health risk assessment (HRA) and its application to regulation. The EPA does not normally require HRA unless there is a lack of detail in the planning for an operation or there are concerns about emissions. It was thought there was a need to establish a better understanding of when HRA should be applied.

It was considered that disproportionate resources were going to managing risks in the ground when compared to those going to managing emissions to air. There are difficulties in managing groundwater. The information on what is in the water and where it is going is generally poor.

In terms of the tools being used to manage industry, PRPs were considered to be very effective. There were concerns that LBL may not provide sufficient financial incentives, particularly in relation to NOx. The basis of measurement for assessing particle emission load may need to come down to PM$_{2.5}$.

There was a massive increase in CO$_2$ emissions from powering the sinter plant and this compromises achievement of the greenhouse challenge commitment. This led to discussion of the tension between greenhouse and air quality emissions management. It was believed that a general policy was needed to manage this tension.

International agreements are the primary driver for greenhouse reductions. One view is that EPA should licence CO$_2$. However, licensing, which has a focus on regional and local impacts, may not necessarily be the best means for managing greenhouse impacts which are global in nature. Emissions trading may be the way forward.

There is a need for some policy context/framework for addressing trade-offs when dealing with LBL and other issues related to licences.

There are economic issues at play. The choice of fuel used by industry is driven by maximising bottom line, and costs of converting to alternative sources can be quite expensive. While coal remains economically competitive, it will be used. Energy costs have fallen, so that co-generation plants are not economic. For example, a Botany co-generation plant was greenhouse and NO$_x$ neutral and replaced coal-fired power in the area and many emissions were reduced. However, it became no longer economic because ordinary power became much cheaper.

It was proposed that sites going through changes that are greenhouse neutral or positive, have a simplified approval process.

For mining, air and water emissions are linked (cross media issues). Other agencies deal with extracting and returning water. Hence, there is a bigger picture of the ecology of a river and multi-users. Air should not be dealt with on its own, but along with other players’ impact on the processes.

Issues

- need to look at integrated pollution management
- integrated approval earlier to look at global and local issues and trade-offs
- mixed feelings about regulating greenhouse in licensing
- LBL offsets
- contaminated sites emissions and air quality
- changing community perspective and interrelationship with industry (public registers; NPI; disclosure). Industry will need to build better relationships with the community.

Clean Air Fund

Greg Davies, Acting Manager
Air Strategies Unit, Air Policy Section
Environment Protection Authority

The Clean Air Fund provides $6 million over three years to address local air pollution problems. The first component of the fund is the woodheater bounty, which is discussed below. The Fund will also provide funding for local councils to address local air pollution problems as well as to trial second stage vapour recovery units at service stations.
Commercial emissions

Pam Johnson, Manager, Cleaner Industries Unit Environment Protection Authority

The Cleaner Industries Program is focused on reducing emissions from commercial and other business premises. The Unit works in partnership with industries and peak bodies to promote cleaner production to industry members. The Unit works with as many bodies as possible to broaden the sphere of influence. The Unit also works with other Government agencies, for example, the Department of State and Regional Development on a pilot program for cleaner production plans, and with local councils which have a role as educators.

In terms of managing air quality, the Unit works with a number of industries:

- printing industry – guide to reduce use of solvents
- furniture industry – environmental information incorporated into industry manual on safety and environment – different finishes
- composites – reducing styrene
- dry cleaners – reducing emissions of PERC (tetrachloroethylene).

The approach is voluntary and is so far working well. The programs tackle a few businesses with change resulting in about 10% of industry. Establishing a wider impact is the challenge.

The scope for minimising emissions of ROCs will be used as a criterion in determining allocation of funding from the $5 million additional allocation.

Determining an appropriate size of grant under the Program was discussed. There was concern that spreading the funding in small amounts across a large number of industries may have less impact than a model providing sizeable amounts to a smaller number. For example, SEDA provided $1 million to BriteStar. Perhaps flexibility allowing for either alternative would be an option.

Access to the waste fund was discussed as a possible source of revenue for the Program.

Woodheater bounty

Simon Smith, Executive Director, Economics and Environmental Reporting, Environment Protection Authority

Simon spoke about the EPA’s program to provide a subsidy to replace woodheaters in a number of regional areas which are badly affected by particle pollution. This is being run in conjunction with local councils. Radiocarbon dating is showing that in some of these areas 95% of particles is coming from woodburning. Polyaromatic hydrocarbons (PAH) are higher than the UK ambient goals and higher than at the boundary of the BHP coke works. The EPA is now working through the detail of the Program, that is, how large a subsidy and for what types of heater.

Domestic emissions – Energy Smart Homes Program

Julie-Anne Lacko, Project Manager Sustainable Energy Development Authority

This program is one of the very successful initiatives in reducing emissions, under which local councils establish Development Control Plans with minimum energy standards for new developments.

The Program is voluntary. Fifty four per cent of all development applications now require minimum energy performance standards for the building envelope.

The Program includes subsidies for systems that otherwise are not price competitive – electric boosted solar; gas boosted solar and heat-pumps. Memorandums of Understanding with industry associations are in place as a means of ensuring industry support and council staff are being trained.

The next stage involves employment of an industry person to be a buildings program manager, to advise on ‘how you do it’.

Branding of the program through logos is being used to influence the consumer market.

In the ACT, there are provisions requiring disclosure using energy star ratings.
Proceedings of NSW Clean Air Forum 2002

Workshop D: Maximising health outcomes

Chair: Stephen Corbett, Director
Environmental Health, NSW Health

A public health success story – the control of lead in air

Bill Balding, Senior Environmental Health Officer
Far West Area Health Service

Mr Balding reported on the most recent study of children’s blood lead levels, which confirmed the trend of blood lead decreasing commensurate with leaded petrol sales. The mean blood level from 623 children sampled in NSW in 1999–00 was 2.3 mg/dL.

The workshop discussed the drivers behind this public health success. A principal initial determinant in the removal of lead in petrol was the incompatibility of lead with catalyst technology. However, later in the process of lead reduction, when half lead petrol was introduced, air and blood lead levels were a significant factor driving the change.

Defining public health challenges

1. Health effects research update

Bin Jalaludin, Deputy Director Epidemiology
South Western Sydney Area Health Service

Dr Jalaludin provided a summary of established health effects of fine particles, ozone, nitrogen dioxide, sulfur dioxide and carbon monoxide.

There is consistent evidence from cities across the world, including Sydney, of effects on respiratory and cardiac health from these air pollutants.

The issue was raised of future risks from sulfur dioxide if current low sulfur coal for power generation is exhausted.

2. Determining air pollution control priorities – a risk assessment approach

Geoff Morgan, Epidemiologist
Southern Cross Institute for Health Research

Dr Morgan noted that there is a confluence between national health priority diseases (cardiovascular, diabetes, cancer, asthma, mental health, injury), and established impacts of air pollution, or more broadly, transport policy. Risk assessment techniques show that while the effects of air pollutants are small, they exert their impact on large populations. Episodes of elevated fine particles and ozone have a quantifiable impact on mortality and hospital admissions in Sydney.

3. Defining personal exposure to air pollution in NSW

Vicky Sheppeard, Environmental Health Branch
NSW Health

Dr Sheppeard described some outcomes from NSW Health studies on indoor air and personal exposure to air pollutants. In homes without major sources (cigarette smoke, woodheaters, gas appliances), indoor air quality is determined by outdoor air quality, particularly for fine particles and nitrogen dioxide. Air toxics exposure also varies with sources and locations, and can be particularly high inside cars.

4. Maximising public health outcomes – physical activity and transport policy

Angela Stewart, Health Promotion Branch
NSW Health

Chris Rissel, Director, Health Promotion
Central Sydney Area Health Service

Ms Stewart described the links between physical inactivity, obesity and adverse health outcomes. Increased physical activity by people is identified as a priority, both within NSW and nationally, by the National Public Health Partnership. Barriers to achieving the minimal daily level of 30 minutes moderate exercise can be removed if the exercise is incorporated into commuting habits.

Mr Rissel described programs initiated within Central Sydney to encourage physically active means of transport. These programs have included partnerships with Local Government, and within the Area Health Service to provide information on transport alternatives and safer walking environments.

The importance of safe cycling environments was discussed. The group questioned whether exposure to pollutants was increased for cyclists. Some studies have shown that pollution exposure is not increased despite
increased respiratory rate while cycling. In-car levels were also noted to be higher than roadside levels for some pollutants.

It is apparent from the research on the health effects of physical inactivity that air pollution is not the only adverse effect of transport policy/car dependence. Transport policy should be developed taking into account health impact assessments. Strategic planning of transport infrastructure, for example, freight rail line, is important. It was also suggested that education for traffic engineers of the health benefits of walking and cycling could improve the provision of facilities for physical activity in future transport developments. It is important to match the response in transport policy to recognised impacts on environment and the broader dimensions of health.

Cultural attitudes to cycling/walking/cars were identified as barriers to using alternatives to cars. In Europe it is acceptable to cycle to work in business attire, making the bike more convenient to use. Individuals' preference for their 'own space' in a car, as opposed to sharing public transport was also noted as a barrier.

Participants in the workshop expressed concern regarding the effect of increasing VKT putting pressure on air quality. Generation of VKT was seen as partly the responsibility of trip generators (major employers). Mobility management (provision of alternate transport choices, reducing need to travel) was suggested as an important role for trip generators.

The issue of health effects of odour from vehicle emissions was raised. Odour and health is an emerging issue, as some recent literature has linked health effects with odour.
## List of Attendees

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