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Submission to the Inquiry into Health Impacts of Air Pollution in the Sydney Basin

4th August 2006

The EDO Mission Statement

To empower the community to protect the environment through law, recognising:

- *the importance of public participation in environmental decision making in achieving environmental protection*
- *the importance of fostering close links with the community*
- *that the EDO has an obligation to provide representation in important matters in response to community needs as well as areas the EDO considers to be important for law reform*
- *the importance of indigenous involvement in protection of the environment.*

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Introduction

The Environmental Defender's Office of NSW (EDO) welcomes the opportunity to provide comment to the NSW Legislative Council's General Purpose Standing Committee No 2 regarding the *Inquiry into the health impacts of air pollution in the Sydney Basin.* The EDO is a community legal centre specializing in public interest environmental law. Previous policy and law reform submissions made by EDO in relation to regulation of pollution can be found at http://www.edo.org.au/edonsw/site/policy.php. Our specific focus for this submission is on the adequacy of the regulatory structure in place, and input has also been sought from our scientific advisory program for the purpose of developing this submission.

This submission examines the various legislative initiatives and other programs developed by the NSW Government to combat air pollution, and provides a critique as to the efficacy of these programs. This submission will focus on the following terms of reference only:

> *(b) the impact of NSW air pollution laws (including the Clean Air Act 1961, the Protection of the Environment Operations Act 1997 and any regulations made under those Acts) on air quality over the past three decades.*
> *(c) the causes of air pollution in the Sydney Basin over the past three decades*
> *(f) the effectiveness of current laws and programmes for mitigating air pollution.*

Our specific comments relate to the following issues:

EXECUTIVE SUMMARY

The New South Wales regulatory regime for air pollution has contributed to an improvement in air quality in the Sydney Basin over the past 30 years. Due to advances in motor vehicle technology and the ban on leaded petrol, there has been a discernible decrease in the ambient levels of carbon monoxide, lead, sulphur dioxide and nitrogen dioxide, often well below national standards. Part One of this submission provides a short summary of key pollutant and trends in Sydney.

The *Protection of the Environment (Operations) Act 1997* (*POEO Act 1997*) has made gains in regulating pollutant emissions from industry by instituting group standards and implementing incremental decreases over time. The Act also includes a load-based licencing scheme which offers financial incentives to industry to reduce their emissions for lower licence fees. Early results are encouraging, as is the increase in toxicity weightings, which will reduce industrial emissions even further.

Notwithstanding these achievements, the *POEO Act 1997*, despite containing an explicit object to reduce risks to human health and prevent degradation of the environment, does not go far enough in regulating emissions from industry. The industrial sector has been given generous timeframes in which to reduce emission levels, effectively stifling attempts to achieve the lower thresholds (under the *POEO (Clean Air) Regulation 2002*). Moreover, there is a lack of long term emissions standards and incentives to stimulate the industrial sector to create better technology and viable alternatives in order to meet appropriate standards. Also, there is no mandatory regulatory regime in place for the complete phase out of known carcinogenic, mutagenic and toxic substances that are known to pose significant danger to human health. Finally, the current legislation does not take into account sensitive sub-sets of the community for whom the tolerance threshold is much lower than the average standards in the *POEO Act 1997,* such as children and the elderly. Part 2A of this submission examines regulation of industrial emissions. We note some Government initiatives regarding regulation of domestic and commercial emissions in Part 2B.

The most significant challenge facing Sydney is the consistent increase in motor vehicle use and motor vehicle kilometres travelled (VKT). Part 2C of this submission looks at the regulation of motor vehicle emissions. The NSW Government has failed to curtail these increases. Viable public transport options are not available and the system is under constant criticism for failure to deliver on improvements and on new railway lines. As a result, emissions from motor vehicles are on the increase. This is the single most important factor determining air pollutant levels in the Sydney Basin. Unless a drastic overhaul of the transport system is instituted in NSW, in conjunction with urban planning initiatives that lead to a decrease in motor vehicle reliance, then gains made in motor vehicle technology and in the industrial sector will soon be substantially subverted by burgeoning vehicle use.

Monitoring and enforcement issues relating to the regulatory framework are discussed in Parts 3 and 4 respectively. A summary of recommendations is contained in the conclusion.

PART 1- AIR POLLUTANT TRENDS IN SYDNEY

As a precursor to examining the legislative initiatives in NSW, this part provides a brief summary of the main contributors to air pollution in the Sydney Basin.

1.1 Ozone

The compounds that are of most concern in Sydney are oxides of nitrogen (NOx) and volatile organic compounds (VOCs). These groups of compounds react to form ozone, or photochemical smog. Ozone has considerable health implications. Prolonged exposure leads to respiratory problems, asthma and reduced lung capacity.[1]

The *National Environment Protection Measure for Ambient Air Quality* (AAQ NEPM) sets standards for all air pollutants and provides threshold levels. These ambient air quality standards were set by the National Environment Protection Council (NEPC). The ozone NEPM four standards are exceeded in Sydney on about 5 days each year, with a high of 21 days in 2001.[2] The one-hour standards are exceeded on about 15 days a year. Figures have reached as high as 175% of NEPM standards. The 2003 *NSW State of the Environment Report* states that the achievement of these ozone standards in the future for Sydney is likely to be a 'significant challenge.'[3] This is certainly the case. A large reduction in the emissions of these two precursor pollutants is needed if national ozone standards are to be consistently met in Sydney. Overseas developments indicate that due to the increasing knowledge of the health ramifications of ozone, standards may become even more stringent, increasing the need for immediate initiatives to reduce the emissions of NOx and VOCs.

According to Environment Protection Authority (EPA) data in 2002, motor vehicles are responsible for 79% of NOx emissions in Sydney, with the balance made up by industry and commercial and domestic activities. Similarly, motor vehicles are responsible for 44% of anthropogenic VOCs in the Sydney region with industrial and domestic sources accounting for the rest.[4]

1.2 Particulates

Particulates are also of concern in Sydney. These are airborne pollutants of varying sizes. Particulates below 10 micrometres in diameter poses a danger to human health as these are too small for the nose to filter out. These particles can penetrate deep into the respiratory tract causing illness and decreased lung function.[5]

In Sydney, NEPM standards for particles are often exceeded. In 2001, the standard was exceeded on 8 days. In 2002 and 2003 24-hour average particle concentrations were significantly higher than the national standards.[6] The NSW Government has consistently

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[1] 'Health Impacts of Air Quality"- Associate Professor Guy Marks, Proceedings of NSW Clean Air Forum 2004- page 33.
[2] 'Future Directions for Air Quality Management in NSW'- Lisa Corbyn. Proceedings of the NSW Clean Air Forum, page 44.
[3] NSW *State of the Environment Report* 2003- Chapter 3.2- Urban Air Quality, page 79.
[4] NSW *State of the Environment Report* 2003- Chapter 3.3- Urban Air Quality.
[5] 'Health Impacts of Air Quality"- Associate Professor Guy Marks. Proceedings of NSW Clean Air Forum 2004, page 33.
[6] 'Future Directions for Air Quality Management in NSW'- Lisa Corbyn. Proceedings of the NSW Clean Air Forum, page 45.

linked these exceedences predominantly to bushfire events. Indeed, markedly higher levels of particulates were observed in 1994 and 2001, both significant bushfire seasons. However, this focus is too narrow, as the sources of particles are diverse. Motor vehicles contribute 10%, industry 40% and commercial and domestic activities 42% of particle concentrations in Sydney.[7]

1.3 Other Air Pollutants

According to an inquiry commissioned by the Department of Environment and Heritage in 1997,[8] motor vehicles contribute up to 85% of carbon monoxide emissions, 90-97% of airborne lead and 3-11% of sulphur dioxide.

Using the NEPM standards as a yardstick, there has been a discernible decrease in the levels of sulphur dioxide, lead, carbon monoxide and nitrogen dioxide in the Sydney region over the last 30 years. No exceedences of NEPM levels in carbon monoxide have been observed in the Sydney CBD since 1998, a likely result of developments in motor vehicle technology.[9] Similarly, lead levels are now often below detection limits and the threat posed to health from this element seems to have been eliminated. This is due to the introduction of unleaded petrol and the prohibition of lead. Nitrogen dioxide levels were often above NEPM levels in the 1980s. NSW Department of Environment and Conservation data show that in the present day, exceedences are rare events. Similarly, sulphur dioxide levels in Sydney are often at less than 25% of NEPM standards. This is partly due to the fact that Sydney does not have power stations and large-scale industrial works located within its airshed.[10] The main contributors to sulphur dioxide levels originate from industry such as oil refineries and coal-powered stations. [11]

PART 2- THE REGULATORY FRAMEWORK FOR AIR POLLUTION IN NSW

As is apparent from the summary in Part 1, sources of air pollutants are diverse, and therefore comprehensive programmes aimed at reducing all the contributing sources are essential within an effective regulatory framework. To determine how effective the current air pollution regulatory regime is in NSW, it is necessary to examine the extent to which the current regime addresses and combats the major contributing causes to air pollution in the Sydney Basin. These relate to:

A. Industrial emissions
B. Domestic and commercial emissions
C. Motor vehicle emissions

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[7] 'Future Directions for Air Quality Management in NSW'- Lisa Corbyn. Proceedings of the NSW Clean Air Forum, page 46.

[8] *Urban air pollution in Australia – Community Summary*. Inquiry by Australian Academy of Technological Sciences and Engineering, 1997.

[9] *NSW State of the Environment Report 2003- p76*

[10] *Urban air pollution in Australia – Community Summary*. Inquiry by Australian Academy of Technological Sciences and Engineering, 1997, page 3.

[11] The impending 2006 NSW *State of the Environment Report* will need to be scrutinised closely to identify whether trends towards decreasing emissions are maintained. Monitoring of air pollutants is discussed further in Part 3.

A. Industrial emissions

Industrial works have been long identified as significant contributors to air pollution and gas emissions. They contribute 40% of particle emissions in Sydney, the majority of sulphur dioxide, and 60% to oxides of nitrogen, which is one of the constituents of ozone. Ozone poses a significant danger to human health.

The Sydney Basin is devoid of large-scale industrial complexes and power stations. This has resulted in markedly lower emission levels from industry and less concern about industrial air pollution in Sydney when compared to other parts of NSW, such as the Illawarra region. Nevertheless, there are numerous industrial and commercial works in the Sydney region that certainly contribute to air pollution (especially to oxides of nitrogen), and that are regulated under the *POEO Act 1997*. This part examines the effectiveness of these provisions in mitigating air pollution in Sydney.

2.1 The *Protection of the Environment Operations Act 1997* (*POEO Act 1997*)

This Act is the primary piece of NSW legislation that deals with air pollution and it codifies laws dealing with the classification, regulation and prosecution of air pollution activities. The legal definition of *air pollution* as encapsulated in the Act is:

> the emission into the air of any impurity, including smoke, dust, cinders, solid particles, gases, mists, fumes, odours and radioactive substances.

There is no general prohibition on causing air pollution in the Act. This contrasts with the water provisions where there are express provisions prohibiting any form of direct or indirect water contamination without appropriate licencing. Air pollution, on the other hand, is regulated through the use of specific provisions responding to particular circumstances.

Air pollution control under the Act operates using a two-pronged approach, utilising licencing and pollution thresholds which are set out in the *Protection of the Environment Operations (Clean Air) Regulation 2002*. The Regulation sets out in Schedule 1 the activities that require a pollution licence. These activities include industrial works that contribute discernibly to air pollution, and emissions such as smelters, castings, metal coating, chemical works, petroleum and crude oil works. The schedule covers the full purview of industrial and commercial activities that ostensibly contribute to air pollution. Operating any of these activities without a licence, or in breach of a licence, is an offence. This regulatory mechanism is a positive means of identifying all premises that conduct such activities and puts conditions on their use.

2.2 Regulatory thresholds for commercial/industrial activities

The *POEO (Clean Air) Regulation 2002* was amended in 2005 to include a new Part 4 prescribing the standards of concentration for emissions of air impurities for each scheduled activity type. The concentrations levels are demarcated according to group allocations of 1 to 6. The Groups are defined according to the date that activities were commenced at the premises. Group 1 is prior to 1972, Group 2 between 1972 and 1979 and so on. Standards of emissions for each chemical are provided according to Group, with Group 6 allowed the lowest emissions. These standards are industry-specific. The Regulation provides for the phasing out of Group 1 by 1 January 2008, after which

premises in Group 1 are taken to belong to Group 2. In a similar vein, Group 2 premises will belong to Group 5 by 1 January 2012. Consistent with our previous submission to the Department of Environment and Conservation (DEC) in 2005, the EDO has some concern with these timeframes.[12] Essentially, it provides for Group 1 industry to attain 1979 standards by 2008, and 1999 standards by 2012. These timeframes are extremely generous and serve to undermine the effectiveness of the Regulation and the promising levels stipulated for Group 6. Indeed, statistics indicate that Group 1 (pre 1972) industry is responsible for 47% of particulate matter, 54% of NOx and 48% of SOx. These premises are allowed to continue their activities at these environmentally-damaging levels until 2008, with no further reduction required until 2012. It is unclear how many premises are still in Group 1, but it is a substantial number. The timeframe is not encouraging greater gains in reducing emissions from industry. Furthermore, the EDO has advocated for medium and long term emissions standards that go beyond Group 6 to Group 7 and beyond. This will assist industry in their long-term planning, provide them with certainty, and will undoubtedly stimulate research into new forms of energy and lead to better developmental practices. However, since the regulation has been enacted these future standards have not been forthcoming.

2.3 Regulatory recognition of impacts on sensitive sub-groups

The EDO has also previously expressed concern about the generality of the air emissions standards in the regulation. The levels set out do not take into account sensitive sub-groups of the population, such as children and the elderly for whom the sensitivity threshold is much lower. The National Environment Protection Council, in its 2005 review of the NEPM standards, acknowledges that an assessment needs to be made about whether certain groups in the community are more sensitive to the effects of air pollution than others.[13] The EDO calls for such an assessment to be conducted in the Sydney Basin in the next 12 months.

Also, there has been some concern regarding whether there is in fact an acceptable level of these harmful compounds in relation to human health. At the Clean Air Forum of 2004, Associate Professor Guy Marks, who is head of Epidemiology at the Woolcock Institute of Medical Research, indicated there is no evidence to suggest that there actually *is* a safe threshold in the dose/response relationship.[14] This means that the most desirable situation in terms of human health might be to prohibit and eliminate these chemicals completely, as there may not be a safe level of exposure. However, the EDO recognises that such an eventuation is impractical in the short term and that thresholds are an inevitable compromise in a commercial/industrial world. This seems to be because the standards were developed based on the ability of industry to meet the expectations, rather than on health considerations. The focus of the regulation must shift to the protection of health, and progressive adjustments to the standard need to be pursued and instituted accordingly.

2.4 Regulation of known carcinogenic, mutagenic and dangerous chemicals

[12] *Submission on the proposed Amendment to POEO (Clean Air) Regulation 2002*, 18 February 2005.
[13] NEPC. "Review of the National Environment Protection (Ambient Air Quality) Measure- Issue Scoping Paper' October 2005.
[14] 'Health Impacts of Air Quality" Associate Professor Guy Marks, Proceedings of NSW Clean Air Forum 2004, page 34.

One of the stated aims of the *POEO Act 1997,* under the broad object of reducing risks to human health and preventing degradation of the environment, is "the reduction to harmless levels of the discharge of substances likely to cause harm to the environment."[15] However, despite this stated objective, the Act does not establish future standards for the *eventual phase-out* of dangerous chemicals that are known to be carcinogenic, mutagenic, teratogenic, and that include toxic substances such as dioxins, furans and mercury. Time-frames should be established under the Act, by which these industrial chemicals will be prohibited completely. These should be in line with medical opinion and community expectations. This has consistently been the position of the EDO and formed part of a previous submission made to the DEC in February 2005.[16] This issue will need to be re-examined if health impacts of air pollution in the Sydney Basin are to be comprehensively addressed as it is currently a significant limitation to the efficacy of the Act as a means of air pollution mitigation. Phase-out of carcinogenic compounds is essential for eliminating health risks to the community.

2.5 Load-based licencing

As a result of amendments to the *Protection of the Environment Operations (General) Regulation 1998,* licence holders can now enter into a load reduction agreement with the EPA for the purpose of obtaining a reduction in licence fees.[17] The promise of lower licencing fees is certainly an alluring prospect for industry and provides it with the impetus required to reduce emissions. As such, the EDO supports the load-based licencing scheme. Monetary incentives seem to be the way forward to ensure optimal co-operation from the industrial sector, and early indications are promising. There has been an 8% improvement from 2001-02 to 2002-03 in total pollutant load (PLI) emitted by licensed activities.[18] Recent reforms have increased the toxicity weighting for many air pollutants which means that participants to the scheme will effectively have to halve their emissions to meet their agreement targets. This is a positive development. An audit by the Department of Environment and Conservation (DEC) in June 2005 found that there were 283 premises that were participating in the scheme with minimal non-compliance. The DEC has negotiated 26 multi-year reduction agreements, which has prevented 2114 tonnes of pollution per year being discharged into the environment, 903 tonnes of which are air pollutants.[19] This is certainly encouraging, but greater gains would be made if long-term targets were established as discussed above.

B. Domestic and commercial emissions

Domestic, commercial and indoor activities contribute significantly to air pollutant levels. The DEC Annual Report for 2004-05 indicates that these activities contribute 41% of emissions of VOCs and 42% of particle emissions in Sydney. These present significant health issues as stated by Associate Professor Guy Marks, at the 2004 Clean Air Forum: 'we should also consider air quality as a continuum that exists both outdoors and indoors, whether this be a workplace, the school environment or in the home'. Hence, programmes to ameliorate air pollution in Sydney must also be assessed on how well they address the domestic sector, which is a rapidly growing contributor to emissions.

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[15] Section 3(d)(ii) *Protection of the Environment Operations Act 1997*.
[16] Submission on the Proposed Amendment to *POEO (Clean Air) Regulation 2002*, 18 February 2005.
[17] *Protection of the Environment Operations (General) Regulation 1998* - clause 25(1).
[18] Department of Environment and Conservation Annual Report 2004-05, page 16.
[19] *Ibid.*

2.6 Government programmes

The NSW Department of Environment and Conservation (DEC) has launched several initiatives targeted at domestic and commercial emissions. The DEC has established a Clean Air Fund, which has developed programmes to reduce emissions from smaller sources that cumulatively contribute to air pollution.[20] These include petrol vapour, outboard motors, solvents, garden appliances, paints and boat engines. In conjunction with this program the DEC has established an air emissions inventory project to gather updated information of the sources of air pollution and to identify smaller and less known contributors, including mobile, biological and domestic pollutants. Also, emission standards on the use of wood heaters in homes, which are a significant source of particulates, have been tightened, giving councils the power to take action against people whose sold fuel heaters smoke excessively.[21] Initiatives that aim to identify and reduce these sources of air pollution are strongly supported by the EDO.

2.7 Regulation of open burning

Open burning is known to be a significant contributor to particulate pollution. As a result, legislation was enacted in NSW in the form of the *Protection of the Environment Operations (Control of Burning) Regulation 2000*. Backyard burning is now banned in urban areas and regulated in rural areas. Open burning of particularly hazardous substances such as car tyres, is also prohibited. Moreover, the EPA has been given power to ban all burning on days which are particularly susceptible to elevated particle levels. This Regulation has the potential to reduce particulate levels in the air and as such, is supported by the EDO.

2.8 Building specifications and community education

A promising initiative that was introduced by the NSW Government in 2004 is *BASIX,* a building sustainability index. This is a web-based planning tool for assessing the performance of new homes against a range of environmental indicators. One of its broad aims is to reduce emissions. New houses must be built to certain specifications that use less water and produce less-emissions. The Total Environment Centre has indicated that it is supportive of the BASIX scheme as it succeeds in designing sustainable, energy efficient homes.[22] The EDO supports all these current initiatives but feels they could be broadened, especially since the domestic and commercial sectors are becoming increasingly important to air pollutant levels. To complement these initiatives, measures to educate the community about domestic and commercial emissions need to be instituted. Maximum gains will only be made in this sector if individual responsibility and self-regulation to curb domestic emissions is encouraged. This will involve engagement with the community to highlight the health risks of air pollutants and to provide mechanisms for pollutant reduction in the home.

C. Motor vehicle emissions

[20] Department of Environment and Conservation (NSW), Annual Report 2004-05, page 19.
[21] *Protection of the Environment Operations (Clean Air) Regulation 2002,* clauses 4, 5, 6.
[22] "Community stakeholder perspectives on air quality" Jeff Angel, Total Environment Centre. Proceedings of NSW Clean Air Forum 2004, page 43.

The third category of emissions examined for the purpose of this submission is motor vehicle emissions.

2.9 Motor vehicle emission standards and initiatives

The NSW Government's 25 year Action for Air plan identifies that a reduction of emissions from motor vehicles is of 'the highest priority.'[23] Amendments to the *Protection of the Environment Operations (Clean Air) Regulation* in 2004 have further tightened emission standards for motor vehicles and the fuels that power them. Air pollution levels have benefited greatly from improved car designs, greater regulation and the introduction of unleaded petrol. These technological improvements have reduced the concentrations of many pollutants from new vehicles.[24] Indeed, significant decreases in VOCs are projected for 2006-07 as a result of the 2004 fuel volatility amendments in the *Protection of the Environment Operations (Clean Air) Regulation*.[25]

The Commonwealth Government has also legislated improvements in fuel quality in association with stringent emission standards for cars, trucks and buses through the *Fuel Quality Standards Act 2000* and the *Motor Vehicle Standards Act 1989*. These are expected to lead to significant reductions in VOCs, particulates and nitrous oxides on a national level by 2020. Furthermore, there are now National Environmental Protection Measures in place for diesel vehicle emissions. Diesel vehicles contribute disproportionately to nitrous oxide emissions and particle air pollution from the transport sector and they are on the increase, being expected to produce up to 48% of diesel particle emissions by 2020. The NSW Government has implemented these legislative developments and has developed associated programmes. For example, the NSW Government has proposed a Cleaner Vehicles Package which aligns stamp duty payments with environmental standards.[26] Also greater monitoring, testing and repair of Government diesel buses have been instituted by the RTA. Further initiatives include the *Cleaner Vehicles Action Plan* for new vehicles which aims to improve the quality of petrol and sulfur levels. All these programmes are generally supported by the EDO as they have the potential to lead to lower emission motor vehicles. Indeed, as mentioned above, advances in fuel technology have had demonstrable results for carbon monoxide and sulphur dioxide.

However, the EDO fears that these improvements offer only a temporary benefit, as increased car use and transport reliance will serve to offset any gains made. Also, several government initiatives have not been realised, for example, establishing a fleet of gas-powered buses. In the Sydney basin there is increasing vehicle ownership, higher kilometres per vehicle (VKT), an increase in the use of older vehicles, the slow turnover of the NSW motor vehicle fleet, population growth and greater traffic congestion. Indeed, from 1991 to 1999 there was an 18% increase in vehicle use in Sydney, with an average of 10 million private vehicle journeys.[27] Furthermore, Vehicle Kilometres Travelled (VKT) increased by 23% between 1991 and 1999, with Sydney's population increasing by approximately 50,000 people per year, and an extra 1.1 million people by 2031.[28] Unless these issues are addressed in an integrated approach, technological

[23] *Action for Air Update*, September 2002, An initiative of the NSW Government, page 3.
[24] *Urban air pollution in Australia – Community Summary*. Inquiry by Australian Academy of Technological Sciences and Engineering, 1997, page 1.
[25] Department of Environment and Conservation Annual Report, 2004-05, page 20.
[26] NSW *State of the Environment Report* 2003, page 77.
[27] *Action for Air- An Update*. September 2002. Published by Environmental Protection Authority, page 8.
[28] 'City of Cities. A Plan for Sydney's Future- Metropolitan Strategy' Department of Planning. December 2005.

advances in motor vehicles will be rendered superfluous. This is not to say that advances in car technology should not continue. However, these innovations should continue in conjunction with further reductions in vehicle emission standards, and initiatives to reduce car use, traffic congestion, encourage public transport and explore alternative fuel sources.

2.10 Public transport and traffic congestion

Viable public transport alternatives to the private vehicle use need to be provided in Sydney. This is certainly a live issue at the moment, particularly relating to the public outcry with the CityRail system, and there is a general consensus that the situation is only getting worse. The NSW Government's *Action for Transport 2010* plan for Sydney outlined various initiatives to improve Sydney's public transport system and increase patronage.[29] However, the success of these enterprises has been undermined by the delay in commencement of the North West Rail Link, the abandonment of the Parramatta to Epping rail link, the low patronage of the Bus Transitways System, poor reliability of services, increased fares and the reduction in train services on many lines. There is therefore currently very little incentive for passengers to choose public transport and reduce their motor vehicle use. Very few improvements, if any, have been observed in the public transport system in Sydney since the *Action for Air* program was launched in 1998. Indeed, the Audit Office of NSW, in its review of the Department of Environment and Conservation's performance in combating air quality, found that the Government is not succeeding in encouraging people to reduce their reliance on cars and in promoting greater use of public transport.[30] The Government's Metropolitan Strategy makes further promises and foreshadows further initiatives to reduce motor vehicle use and improve public transport. These include a reiteration of previous promises that have not been forthcoming.[31]

The EDO is fully supportive of all these proposed programmes as they present the potential to reduce car use and they also show a clear motivation by the NSW Government to curtail air pollutant levels. However, although the good intentions are there, the delivery is not. This is the *most significant factor* affecting the success of current programs to mitigate air pollution in the Sydney Basin. Travel management strategies that deliver results must be of the highest priority, and must be initiated immediately.

EDO recommends that NSW should investigate the imposition of levies such as those adopted in other jurisdictions. The Victorian Government introduced a Congestion Levy applying from January 1 2006, designed to impact positively on the CBD environment and encourage use of public transport, as part of a strategy aimed at reducing peak hour traffic congestion in the Melbourne Central Business District. The Levy is an annual charge and applies to "off street" parking spaces used for parking cars or larger motor vehicles within the Levy area, involving an annual fee of $400 for 2006 on all long stay car parks, rising to $800 in 2007, with a range of exemptions applying.[32] The funds generated from such a levy should be hypothecated to public transport initiatives.

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[29] *Ibid.*

[30] Auditor-General's report -' Managing Air Quality'- The Audit Office of NSW- April 2005.

[31] 'City of Cities. A Plan for Sydney's Future- Metropolitan Strategy'. Department of Planning. December 2005.

[32] See the *Congestion Levy Act 2005*. We note that as confirmed by the High Court and legal analysts, "the states' ability to pursue environmental goals through taxation measures is significantly restricted by section

A successful congestion charging scheme has also been established in London. The London scheme requires drivers to pay £8 per day if they wish to continue driving in central London during the scheme's hours of operation. It reduces the number of private cars on city roads, and encourages the use of other modes of transport.[33]

The application of such a scheme in Sydney would reduce the number of cars emitting air pollutants in the city, encourage the use of public transport, and generate funds for cleaner transport initiatives.

2.11 Integration of land-use and transport planning

Sydney's population is a widely distributed and of relatively low density. This is described in the inquiry conducted on behalf of the Department of Environment and Heritage as "the worse case scenario in energy and pollutant terms." It is clear that urban planning has a large role to play with regards to transport and settlement patterns. If Sydney continues to sprawl outwards, then a lack of forward planning and effective pollution initiatives will result in a deterioration of air quality standards.

The NSW Government released a draft State Environmental Planning Policy in 2001 on Integrating Land Use and Transport. This was a positive proposal that would have meant that local councils had to ensure that planning decisions improved accessibility and public transport, and encouraged planning for new areas that supported public transport viability.[34] This draft received broad support from stakeholders but has yet to commence. The 2005 Metropolitan Strategy contains urban planning targets and strategies. The NSW Government has promised a greater integration of land use and transport planning. The strategy includes a five cities model of Sydney, North Sydney, Parramatta, Liverpool and Penrith, each with its own infrastructure, employment and transport mechanisms that will reduce the need to travel to the Sydney CBD.[35] The EDO is supportive of this plan but would like to see improved mandatory integration of accessibility and transport considerations into planning decisions.

PART 3: MONITORING OF AIR POLLUTION IN SYDNEY

Monitoring of air pollution levels was one of the successful aspects of the regulatory regime. The DEC provides daily air quality information to the public, quarterly monitoring reports and had been collecting data from 20 stations in the Sydney Metropolitan Region utilising innovative monitoring techniques. Recently however, numerous monitoring stations have been closed, including stations at Earlwood, which was monitoring pollution in the M5 East Tunnel, and a station in George Street in the CBD that had been monitoring city traffic. Furthermore, as indicated by the Total Environment Centre (TEC), sampling levels have dropped from 1500 to 450.[36] This is of

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90 of the Australian Constitution, which prohibits states from raising taxes by way of excise. With this premise, to be valid a State levy must not relate to production or export of goods. The Congestion levy has not been challenged on the grounds of being in breach of the Constitution, and it has not been characterised as an excise as it is not concerned with the production or export of "goods" as specified by section 90 of the Constitution.

[33] See: http://www.cclondon.com/index.shtml

[34] *Action for Air- An Update*, *op cit*, page 7.

[35] 'City of Cities. A Plan for Sydney's Future- Metropolitan Strategy'. Department of Planning. December 2005.

[36] "Community stakeholder perspectives on air quality" Jeff Angel, Total Environment Centre, Proceedings of NSW Clean Air Forum 2004, page 43.

concern in terms of data sampling and in terms of the DEC's capacity to accurately monitor air quality levels. Reducing the sample size reduces the accuracy and veracity of air pollutant data. Without a full understanding of the temporal and spatial trends in air pollutant levels, initiatives to reduce air emissions will be less efficacious. Indeed, the NSW Audit Office believes that the significant reduction in DEC's air quality monitoring capacity needs to be reviewed.[37] The EDO recommends a review occur and adequate resources are directed at reinstating a comprehensive monitoring service.

PART 4: ENFORCEMENT

In 2001-2002, the EPA received 7,171 notifications about smoky vehicles from the public.[38] Infringement notices totalled 1,226 and prosecutions amounted to 29. It is unclear whether all notifications were investigated considering the significant discrepancy between notifications and infringements. Furthermore, non-vehicle air pollutant offences amounted to just 76. Other offences under the *POEO Act 1997* and Regulation, such as contravening licence conditions, equalled 630. The data provided by DEC in its annual report indicate that smoky vehicle prosecutions are on the decrease.[39]

A promising initiative that has been established is the Smoky Vehicles Enforcement Program. This allows members of the community to report smoky vehicle offenders via the internet. The utility of this program can be assessed once prosecution figures arising from online reporting become available.

With tightening vehicle emission standards, increased reporting from the community and significant increases in motor vehicle use, it might be expected that prosecutions and infringements would be on the increase rather than decreasing. Sufficient resourcing of DEC is needed to ensure consistent prosecutions of air pollution breaches, and that a strong deterrent is established stemming from the certainty of polluters "being caught." In addition, it would be useful if the EPA provided specific details of breaches of licences in relation to air pollution specifically, not just figures for 'breach of licence' which could refer to a number of pollution sources.

CONCLUSION

The current legislative air pollution framework has the potential to reduce emissions and there seems to be a discernible impetus towards developing and refining laws to combat the threat of air pollution to human health (and indeed environmental health), especially in the Sydney Basin. Legislative amendments relating to industry, load-based agreements, domestic activities and improvements in car design and efficiency, have had a demonstrable impact that have curtailed some of the air pollutant threats to human health and environmental wellbeing in Sydney. The EDO generally supports these initiatives, with the qualifications discussed above.

However, the NSW air pollution system needs to take the next steps forward to a rigorous system that involves more rigid prosecution, intensive monitoring and the eventual prohibition of chemicals that are known to be carcinogenic and deleterious to human health. Also, progressive targets for industry are needed that require continual reductions across a long-term continuum that would provide industry with the incentive

[37] Auditor-General's report -' Managing Air Quality'- The Audit Office of NSW- April 2005
[38] Environment Protection Authority, 2002.
[39] Department of Environment and Conservation *Annual Report* 2004-05, page 18.

to develop more efficient fuels and viable energy alternatives. Lastly, the framework does not go far enough in relation to pollution from motor vehicles. Reliance on the motor vehicle in Sydney does not show any sign of dissipating and car use is on the increase, as is vehicle kilometres travelled (VKT). This poses a considerable threat to the air quality in Sydney. However, legislation is but one piece of the jigsaw. Appropriate transport programs and community education initiatives must be fully implemented. The current public transport network does not present an attractive option to commuters, or an affordable one. A total overhaul of the system is needed and the NSW government needs to deliver on its Metropolitan Strategy, *Action for Air* and *Action for Transport 2010* promises. Unless viable, affordable and reliable transport alternatives are established in Sydney, increased emissions from vehicles will rapidly outweigh any technological and industrial gains made, and there will be an overall increase in air pollutant levels, particularly in ozone and particulates. This scenario would pose significant medical, financial and environmental strains on the Government and the community.

Summary of recommendations

- Consistent with our previous submission to the Department of Environment and Conservation (DEC) in 2005, the EDO has some concern with the timeframes under the *POEO (Clean Air) Regulation*. The current timeframes are extremely generous and serve to undermine the effectiveness of the Regulation and the promising levels stipulated for Group 6. Furthermore, the EDO has advocated for medium and long term emissions standards that go beyond Group 6 to Group 7 and beyond. This will assist industry in their long-term planning, provide them with certainty, and will undoubtedly stimulate research into new forms of energy and lead to better developmental practices.
- Air emissions standards in the regulation should take into account sensitive sub-populations of the community such as children and the elderly for whom the sensitivity threshold is much lower. The EDO recommends an assessment be undertaken concerning the sensitivity of certain groups to air pollution (as supported by The National Environment Protection Council, in its 2005 review of the NEPM standards). This should be initiated in the next 12 months.
- The *POEO Act 1997* Act should establish future standards and timeframes for the eventual phase-out of dangerous chemicals that are known to be carcinogenic, mutagenic, teratogenic, and that include toxic substances such as dioxins, furans and mercury.
- The EDO recommends measures be undertaken to educate the community about domestic and commercial emissions. This will involve engagement with the community to highlight the health risks of air pollutants and to provide mechanisms for pollutant reduction in the home.
- Innovations in motor vehicle efficiency should continue in conjunction with further reductions in vehicle emission standards, and initiatives to reduce car use, traffic congestion, encourage public transport and explore alternative fuel sources.
- The EDO recommends that there be better integration of land use and transport planning, as proposed in the 2005 Metropolitan Strategy. There needs to be clearer mandatory consideration of accessibility and transport in planning decisions.

- The NSW Audit Office believes that the significant reduction in DEC's air quality monitoring capacity needs to be reviewed.[40] The EDO recommends that such a review be undertaken as a priority and that adequate resources be directed at reinstating a comprehensive monitoring service.
- EDO recommends that NSW should investigate the imposition of a congestion levy similar to that imposed in Victoria and London, with the funds hypothecated to public transport initiatives.

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[40] Auditor-General's Report 'Managing Air Quality' The Audit Office of NSW- April 2005.