

30 March 2010

Lisa Corbyn
Director General
Department of Climate Change, Environment and Water (DECCW)
PO Box A290
SYDNEY SOUTH NSW 1232

Dear Lisa,

The Australian Sustainable Business Group (ASBG) wishes to express concern over the portrayal of industry air emissions data in the 2009 State of the Environment Report (SoE). Of particular concern are industry's reported increase oxides of nitrogen (NO_x), which is considered misleading and the accuracy of other related data in this report.

As a result industry's environmental performance is being subjected to some difficult explanation as this report states its NO_x performance has significantly deteriorated over a 5 year time frame. Hence we are finding industry being criticized over the contents of this section of the SoE Report, which we believe somewhat misrepresents the actual industrial emission of NO_x by Sydney's industrial sector. Consequently, ASBG is looking to the Department to provide clarification of this data so it can be put into perspective and that any better data and/or estimates can be provided to correct any misinterpretations arising from the SoE 2009 report.

Industry Increases NO_x by 49% is Misleading

Under the SoE, Chapter 4 Atmosphere, Pressure the report states:

NO_x emissions from industry in Sydney, which increased 49% (6876 tonnes), [2003-2008]

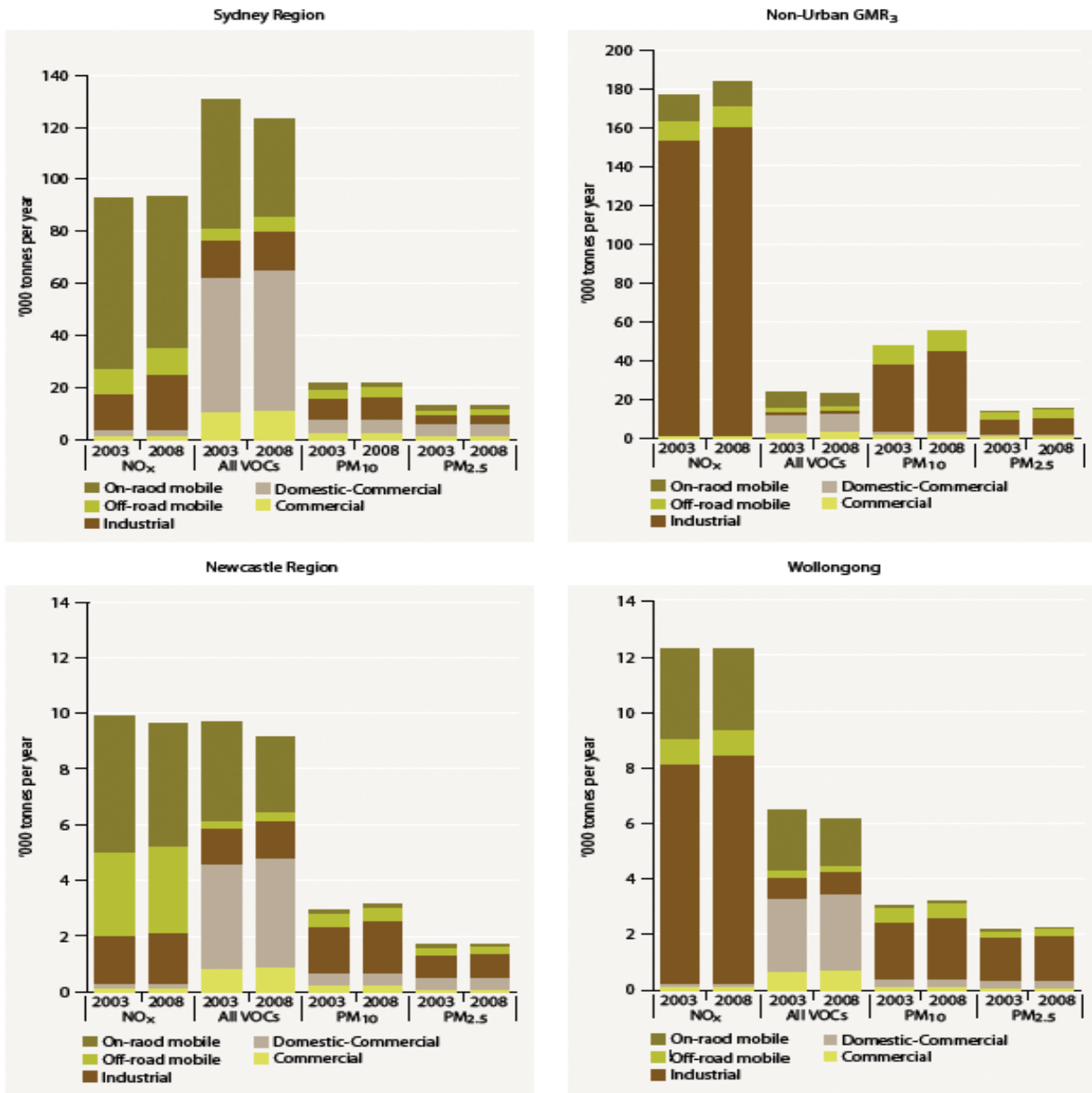
This conclusion was drawn from [graph 4.10 in the SoR](#) (shown below) and also shows other questionable trends in air emissions between 2003-2008.

On reading the data sets, from where this conclusion was drawn, shows that it was a comparison of two different sets. The 2003 data was based on the Metropolitan Air Quality Survey (MAQS), a hard data set based on reported emissions from individual sites. 2008 data, on the other hand was based on an extrapolation of the 2003 data, which depending on the method used can generate highly variable results.

ASBG's analysis of National Pollutant Inventory (NPI) data suggests that industry located within the Sydney area increased its NO_x by around 950 tonnes p.a.¹, [2003-2008] excluding any new electricity generation in the Sydney area. Such an increase, of about 5% over the 5 years period, is less than Sydney population and economic growth. This leaves a gap of nearly 6,000 tonnes NO_x increase, under the SoE, which requires explanation.

¹ NPI data lists the GMR NO_x data. 2008 sector data was subtracted from 2003 data. The 950 t increase figure was arrived at by the sum of individual industry sectors increases and decreases, which were considered Sydney based. Where partly Sydney based, an estimated proportion was used. Electricity generation was not included.

Figure 4.10:
Sources of NO_x, VOC, PM₁₀ and PM_{2.5} emissions by sector, 2003 and 2008, GMR₃



Source: DECC 2007b

Notes: The 2008 emissions are estimates based on the 2003 data using surrogates such as estimated energy consumption, estimated population and forecast transport growth.
 'Off-road mobile' includes aircraft, trains, boats, heavy mining machinery, etc.
 'Non-Urban' is the area of GMR₃ not covered by the Sydney, Newcastle and Wollongong regions. It includes areas such as Muswellbrook, Singleton, Cessnock, Lithgow, Kiama and the Central Coast.

As a result this comparison of hard 2003 data with the 2008 data is like comparing apples and oranges, resulting in a misleading conclusion that industry's NO_x increased by 49% over 5 years. Not only is this a flawed scientific approach, the outcomes of this extrapolation process generate a result that is about 7 times higher than the publically available NPI data shows.

It would have been a better choice to have used the NPI data for reporting industry's 2008 NO_x emissions in the SoE. Load Based Licensing data from licensed sites on NO_x is quite accurate and is collected, collated and provided to the Environment Protection and Heritage Council by DECCW for use in the NPI. DECCW has full access to LBL data, which required load fees paid on these emissions and other better data. Consequently, DECCW could have provided a far more accurate estimate of industry's NO_x emissions over this time period than appears in the SoE report

ASBG questions why this extrapolation method was used when far more accurate data was available to DECCW to calculate industry's NO_x emissions over this time period?

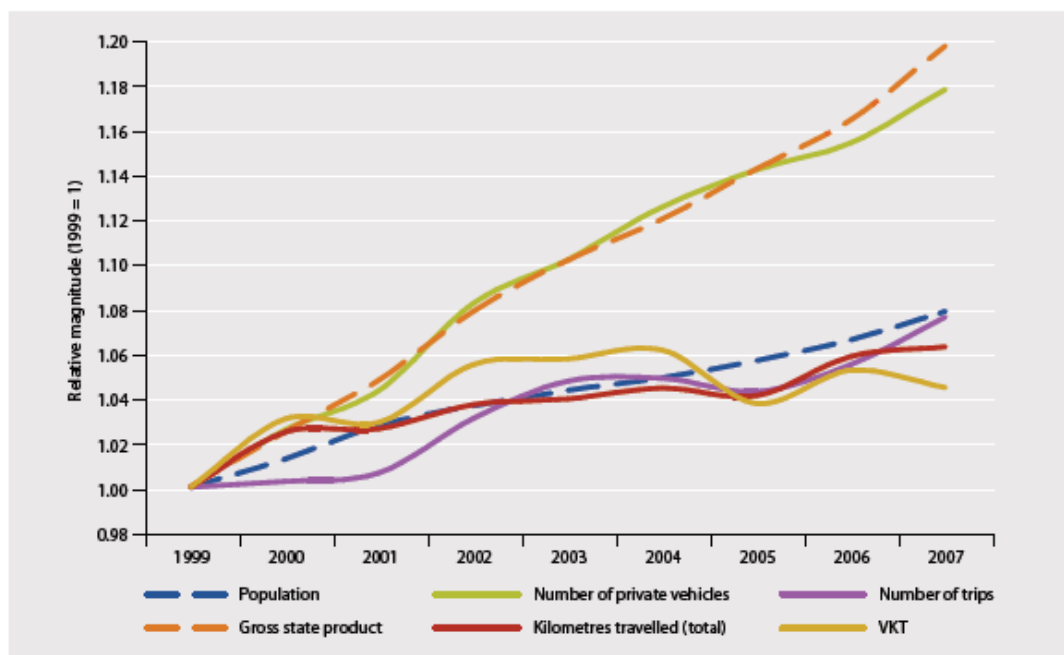
ASBG also concludes the statement that industry's NO_x emissions increased by 49%, 2003-2008, is misleading and requires correction.

Motor Vehicle Emissions Reduction Surprise

On closer inspection *graph 4.10 Sydney Region* shows virtually no increase in total NO_x from 2003 to 2008. While industrial and off road emissions increased, it appears their NO_x increases were counter-balanced by a **decrease** from on-road vehicles. This appears to be a remarkable 15% reduction in NO_x from on-road vehicles. A similar effect is seen with Volatile Organic Compounds (VOCs) [e.g. petrol emissions] from on-road motor vehicles undergoing a 23% decrease over this time period.

Here is [graph 3.12](#) from the same report:

Figure 3.12:
Travel by Sydney residents on an average weekday, 1999–2007



Source: NSWTI 2009

Notes: Year estimates are based on three years of pooled data. For example, the 2007 calendar year estimate uses data collected from July 2005 to June 2008 weighted to the 'Estimated Resident Population' issued by the Australian Bureau of Statistics for June 2007.

Consider the following based on the above graph:

- That the number of vehicles increased over that time period ~ 9.2%
- Vehicle kilometres traveled also increased ~ 3.8%

ASBG finds it remarkable, if not over optimistic, that 'on-road vehicles' emissions have dropped by 15% for NO_x and by 23% for VOC between 2003-2008.

The SoE argues:

Emissions from motor vehicles decreased from 2003 to 2008 as a result of improving vehicle emission standards, a stabilisation in vehicle kilometres travelled over that period (see [Human Settlement 3.3](#)), and a lower fleet age (older vehicles generally have less advanced emission control technology and the effectiveness of emission control systems usually deteriorates with years of use).

The success claimed by motor vehicle emissions appear to be made, again by extrapolative means, and not based on real emissions data. Nevertheless, the extrapolation method used appears to provide over optimistic results when compared to other findings. In contrast to the SoE report, the *Bureau of Transport and Regional Economics* predicts the following improvements in the emissions from motor vehicles:

BTRE projects² that the phase out of older vehicles, combined with new Australian Design Rules to 2006, will deliver overall reductions in total metropolitan motor vehicle emissions to 2020. For the major ambient air pollutants:

- *Nitrogen oxides emissions are projected to decline by approximately 23 per cent.*
- *Volatile organic compound emissions—including exhaust and evaporative emissions—are projected to decline by approximately 20 per cent.*

It appears that the SoE report is claiming NO_x and VOC emission reductions over 5 years, where BTRE estimates this would take around 14 years to achieve similar results. ASBG therefore considers the motor vehicle emission reductions appear over optimistic and questions the validity of the extrapolation method used.

Another contradiction is found on inspection of the NPI data NO_x emissions from motor vehicles in the Greater metropolitan region which remains a flat 88,000 t.p.a. from 2003 to 2008. Hence, the NPI data is contrary to the SoE data. Such differences in environmental data must send confusing messages to the public reviewing emissions that have substantial errors. If the NPI data is incorrect, then again DECCW must take some responsibility for the lack of accuracy in the supply of contextual data to the NPI. Many organisations, public and private, use SoE and NPI data for a variety of reasons. Consequently, the role of government is to provide accurate data and firm conclusions so that policy can be made upon the best information available.

DECCW also around the same time released its Action for Air Policy 2009. However, the graphs and data presented on NO_x related back to 2003 data as it appears that accuracy was more important for this document.

Summary


Use of an extrapolation technique in the SoE 2009 report results in a misleading and scientifically flawed conclusion that *NO_x emissions from industry in Sydney, which increased 49% (6876 tonnes), [2003-2008].*

This conclusion was reached despite more accurate and publically available NO_x industry data being available under the NPI and other sources.

As a result of the SoE report being released, industry is being asked to explain its 49% increase in NO_x emissions. ASBG has no option but to ask DECCW to also explain and provide more details on its extrapolation methods and to correct its flawed conclusion on industry NO_x performance. In addition, ASBG also requests that industry's NO_x emissions generated from LBL data, between 2003 to 2008, be made available to correct any misinterpretations which result from the SoE report.

I look forward to your response so that DECCW and industry can continue to work together in a professional manner, supported by accurate data and achieved sustainable development.

Yours sincerely



Andrew Doig
National Director
AUSTRALIAN SUSTAINABLE BUSINESS GROUP (ASBG)

² [BTRE Health Impacts of Transport Emissions In Australia: Economic Costs 2005 p45](#)