

Diesel and marine fuel emissions in NSW - sources and trends

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Nick Agapides, Manager Major Air Projects

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 Greater metropolitan region including Sydney, Newcastle and Wollongong where 75% of NSW population lives





 Natural and human-made sources like commercial businesses, household activities, EPA-licensed industry, off-road transport and registered vehicles





• Over 1000 substances, including criteria pollutants, organics, metals, PAH, PCDD/PCDF, ammonia and GHG





 Compiled in 1992, 2003, 2008 and 2013 (in progress) to provide sound evidence for improving air quality



Tracking sources of air pollution in NSW communities

Air emissions inventory for the Greater Metropolitan Region of NSW

Why do we need an air emissions inventory?

Air pollution comes from many sources, so to find the best ways to improve air quality we need to know the contribution made by each source. The last air emissions inventory for NSW was completed in 2007 and although that information has served us well until now, emissions have changed, making it necessary for a new inventory.

The major task of developing the new inventory started in 2009 and took over 2 years to complete. The results are now available and are being used to shape the way we improve air quality in NSW.





 Transport a significant source of PM and ozone precursors





Direct and indirect formation of ozone & PM

- Ozone is formed from NOx and VOC precursors
- PM includes:
 - direct emissions (soot, crustal)
 - secondary organic and inorganic (sulfate and nitrate) aerosols





Diesel & marine fuel transport emissions are significant





Diesel & marine fuel transport emissions are significant





Major diesel & marine fuel transport emission sources





Major diesel & marine fuel transport emission sources



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Emissions vs diesel & marine fuel consumption





Performance of major diesel & marine fuel transport emission sources



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Performance of major diesel & marine fuel transport emission sources





Anthropogenic emissions declining in Sydney





ADRs for on-road diesels getting tighter





Future diesel & marine fuel consumption





Future diesel & marine fuel transport emissions





Where do marine fuel transport emissions occur





Where do marine fuel transport emissions occur



MGA Easting (km)





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Conclusions

- Non-road diesel & marine fuel emissions a significant source of PM and ozone precursor emissions
- Non-road diesel & marine fuel consumption similar to on-road diesel but likely to increase
- ADRs have been successful at reducing on-road diesel emissions
- Technologies and cleaner fuels are available to reduce non-road diesel & marine fuel emissions but cost is likely to be a major issue in some cases
- A significant health benefit can be achieved by reducing non-road diesel & marine fuel emissions



Questions?