Diesel and marine fuel emissions in NSW - sources and trends

NSW EPA Shipping Emissions Stakeholder Workshop

Friday 14th November 2014

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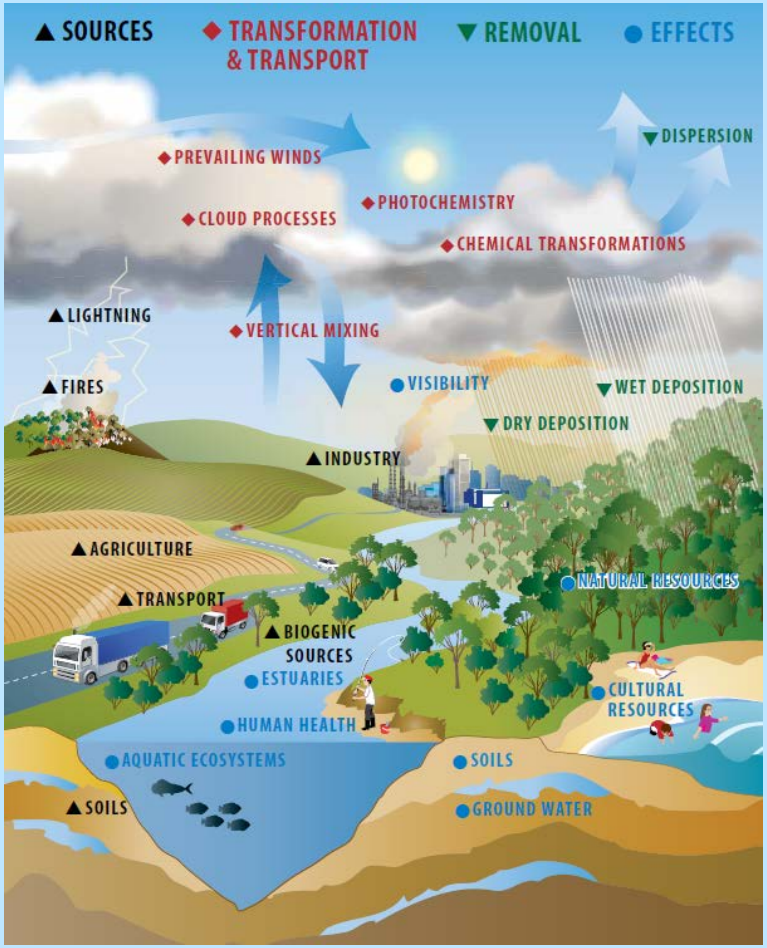
Inventory provides sound evidence

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

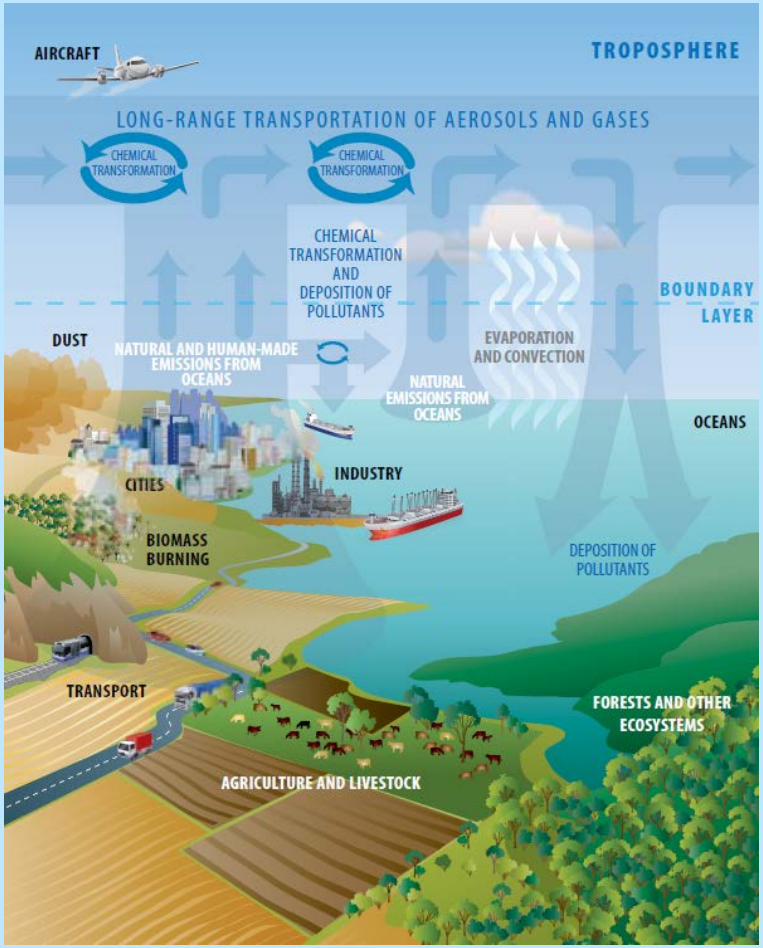
Inventory provides sound evidence

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



Inventory provides sound evidence

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

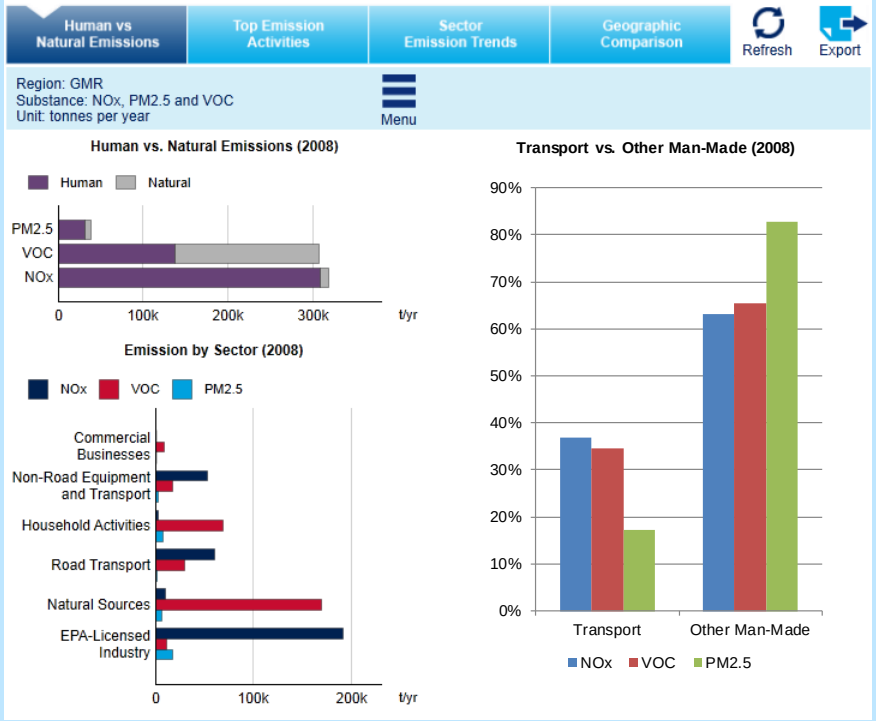


Inventory provides sound evidence

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

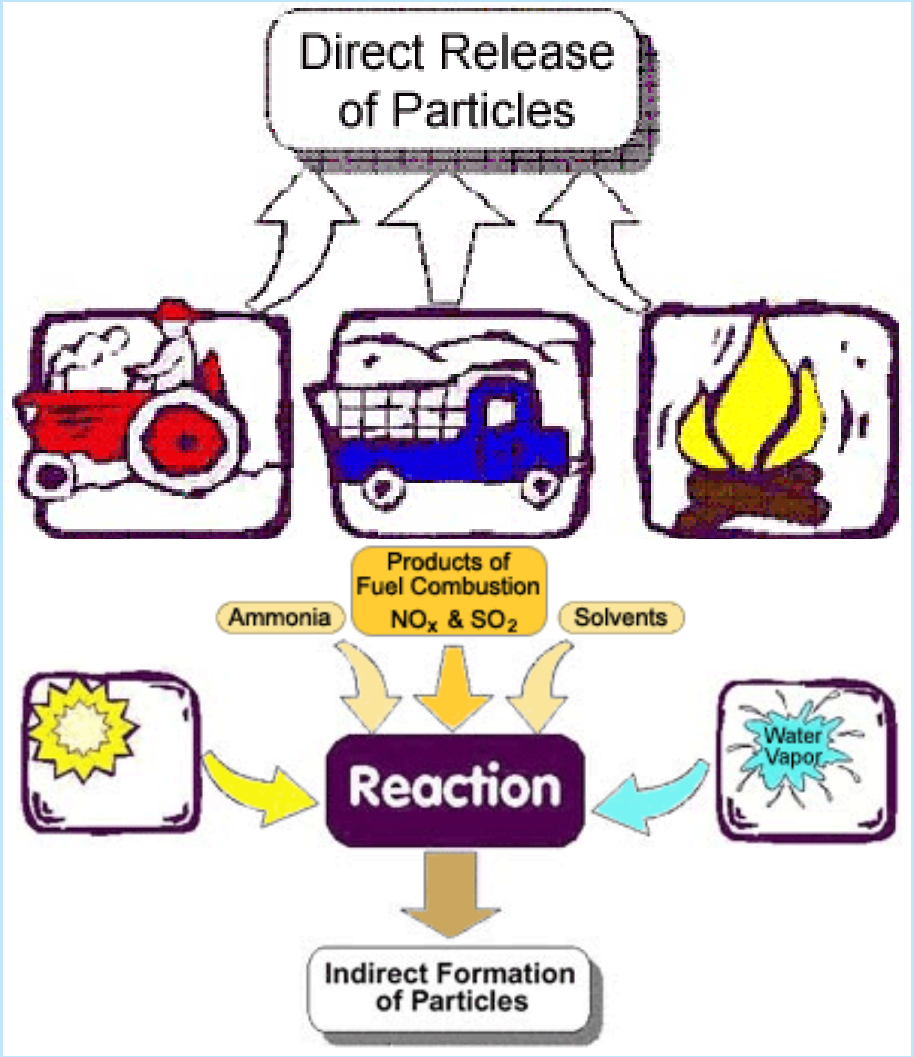
Inventory provides sound evidence

- Transport a significant source of PM and ozone precursors

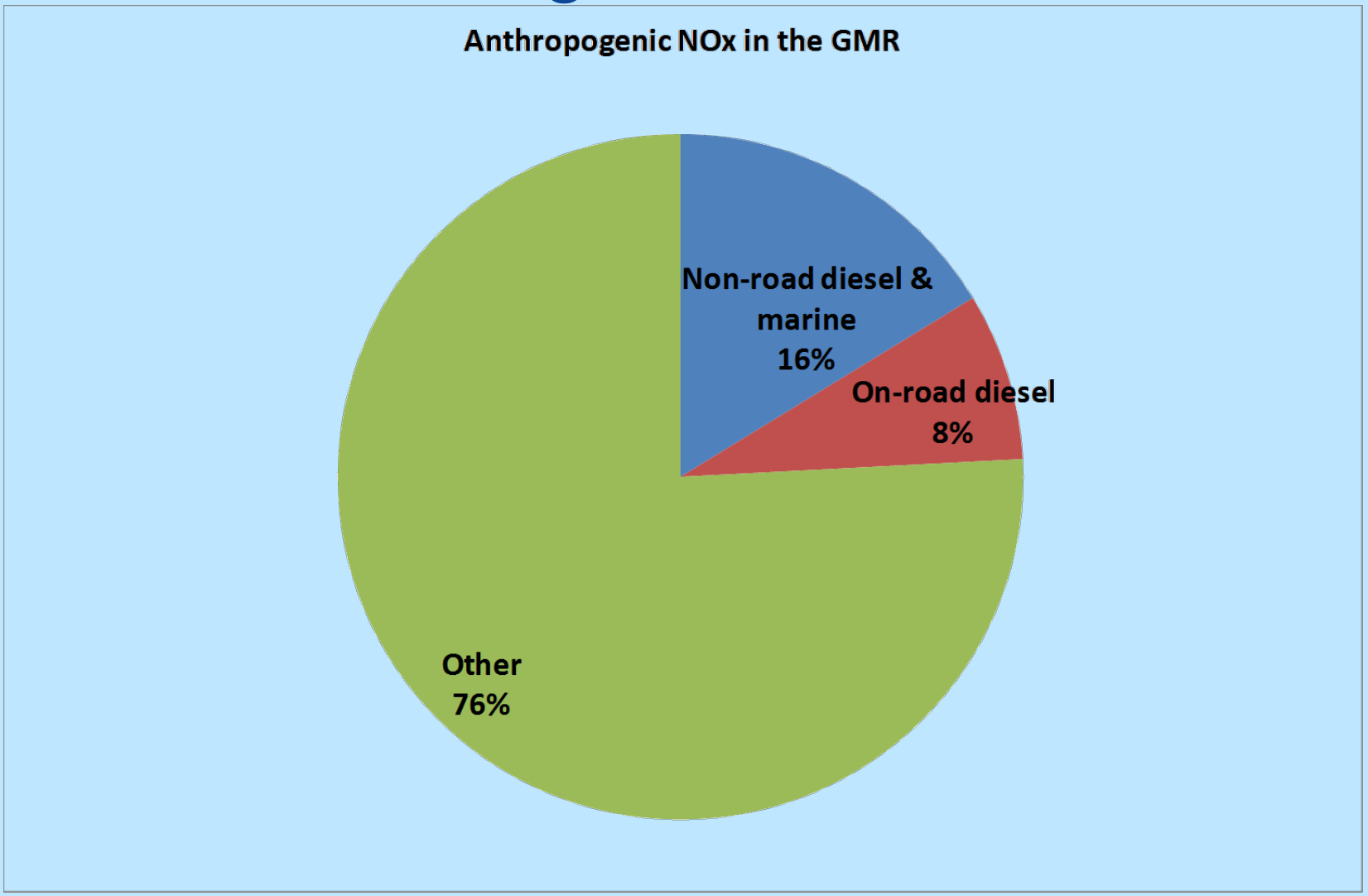


Direct and indirect formation of ozone & PM

- 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



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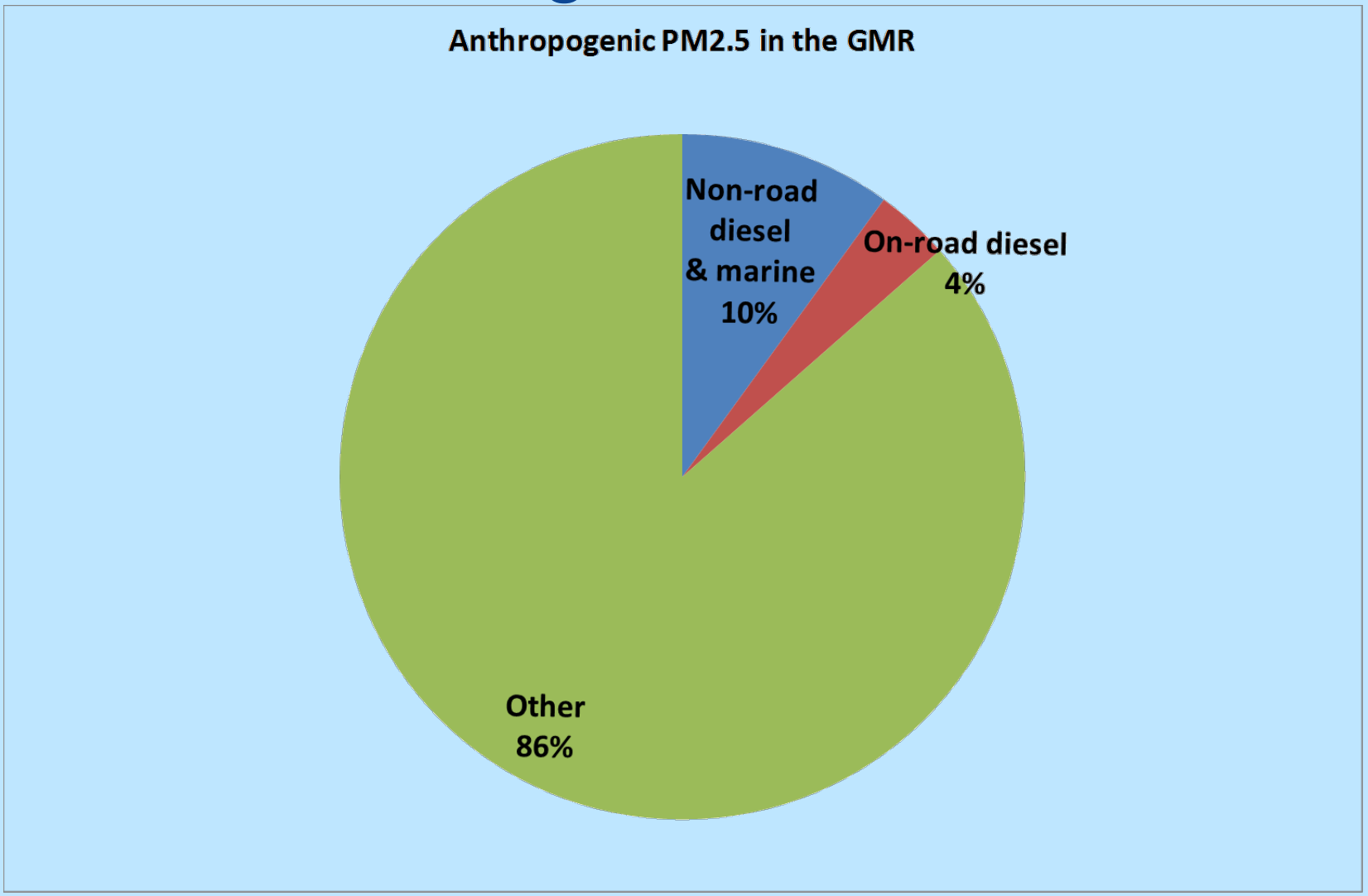
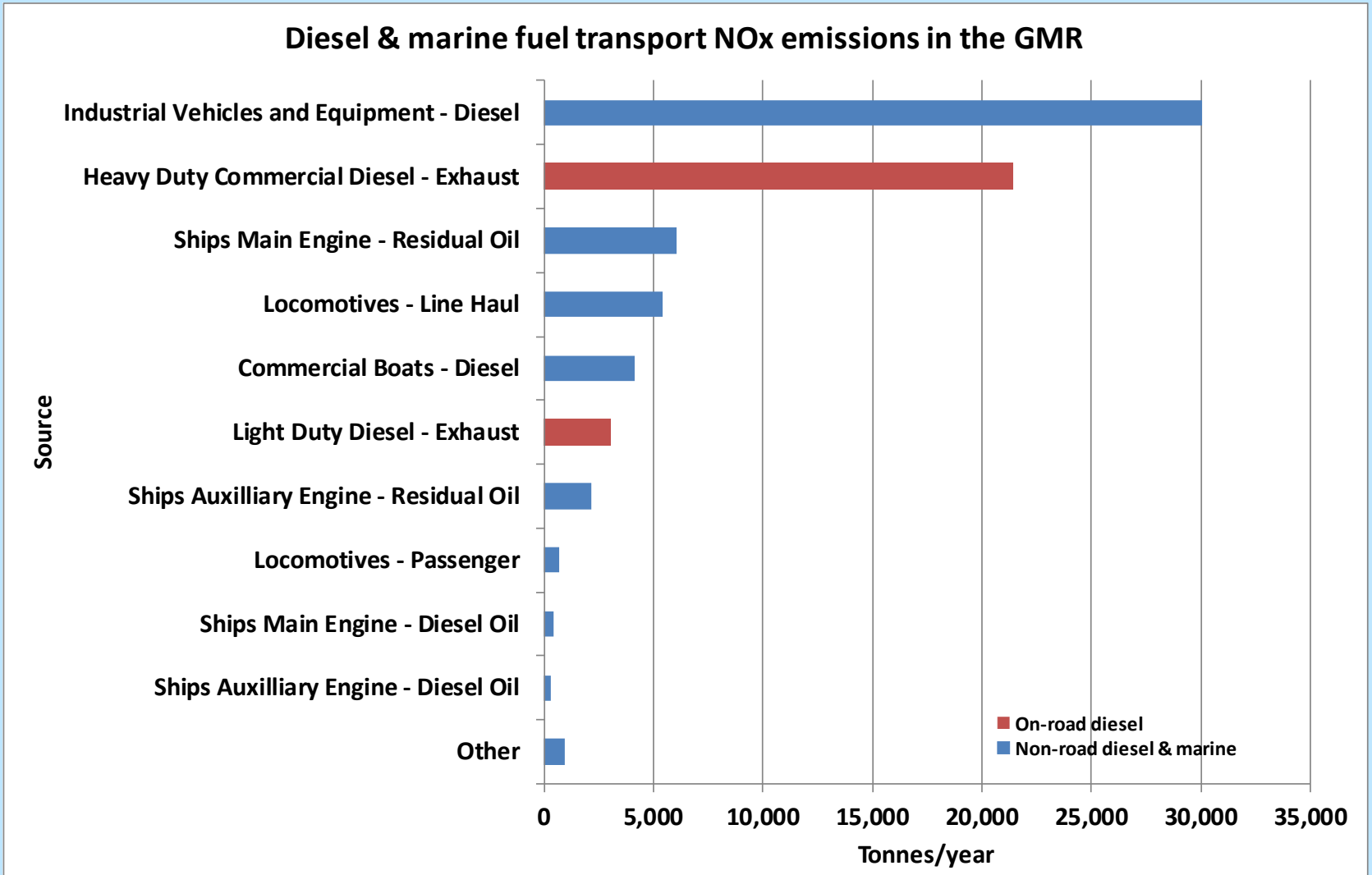


Major diesel & marine fuel transport emission sources



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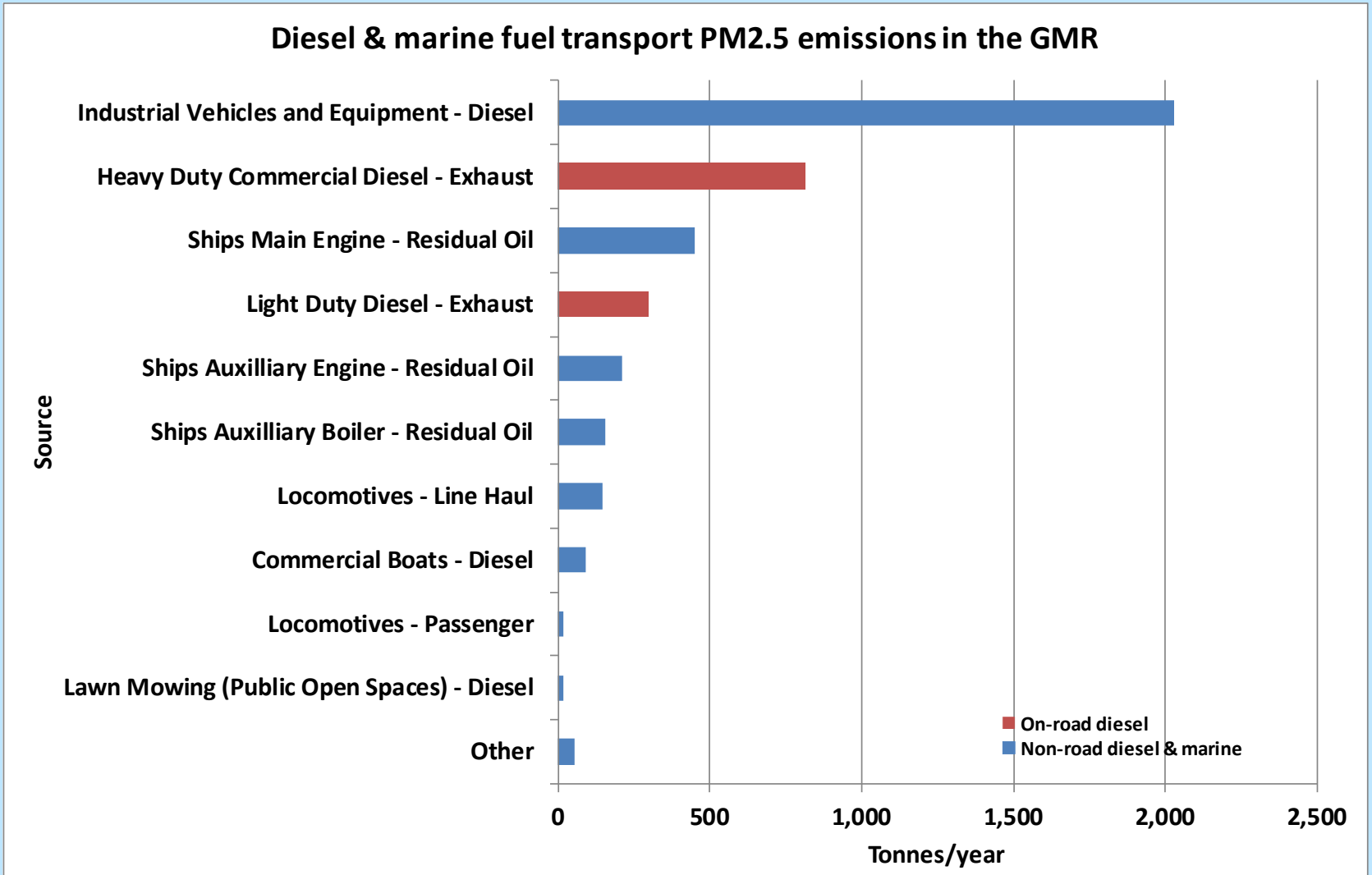
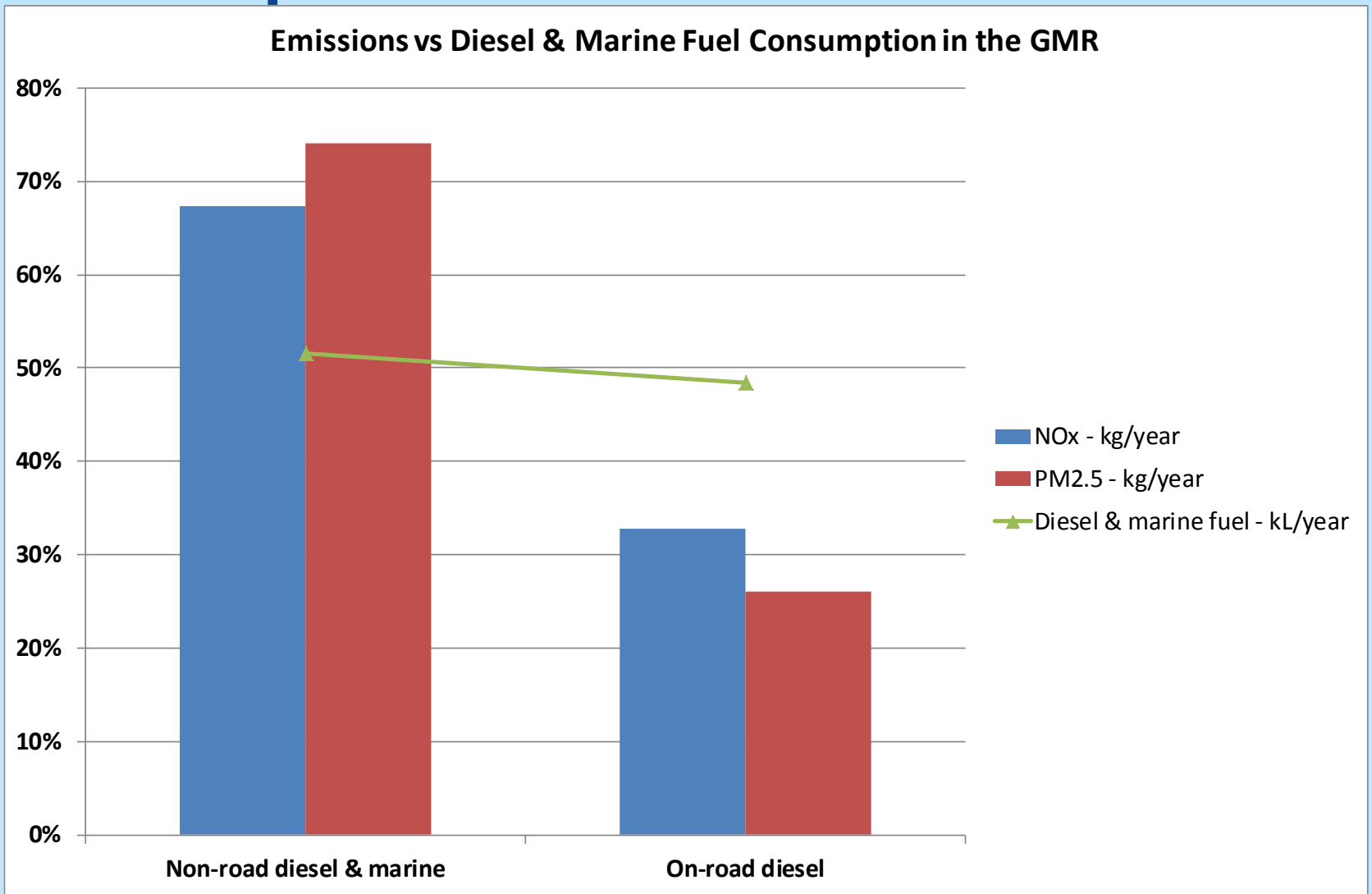
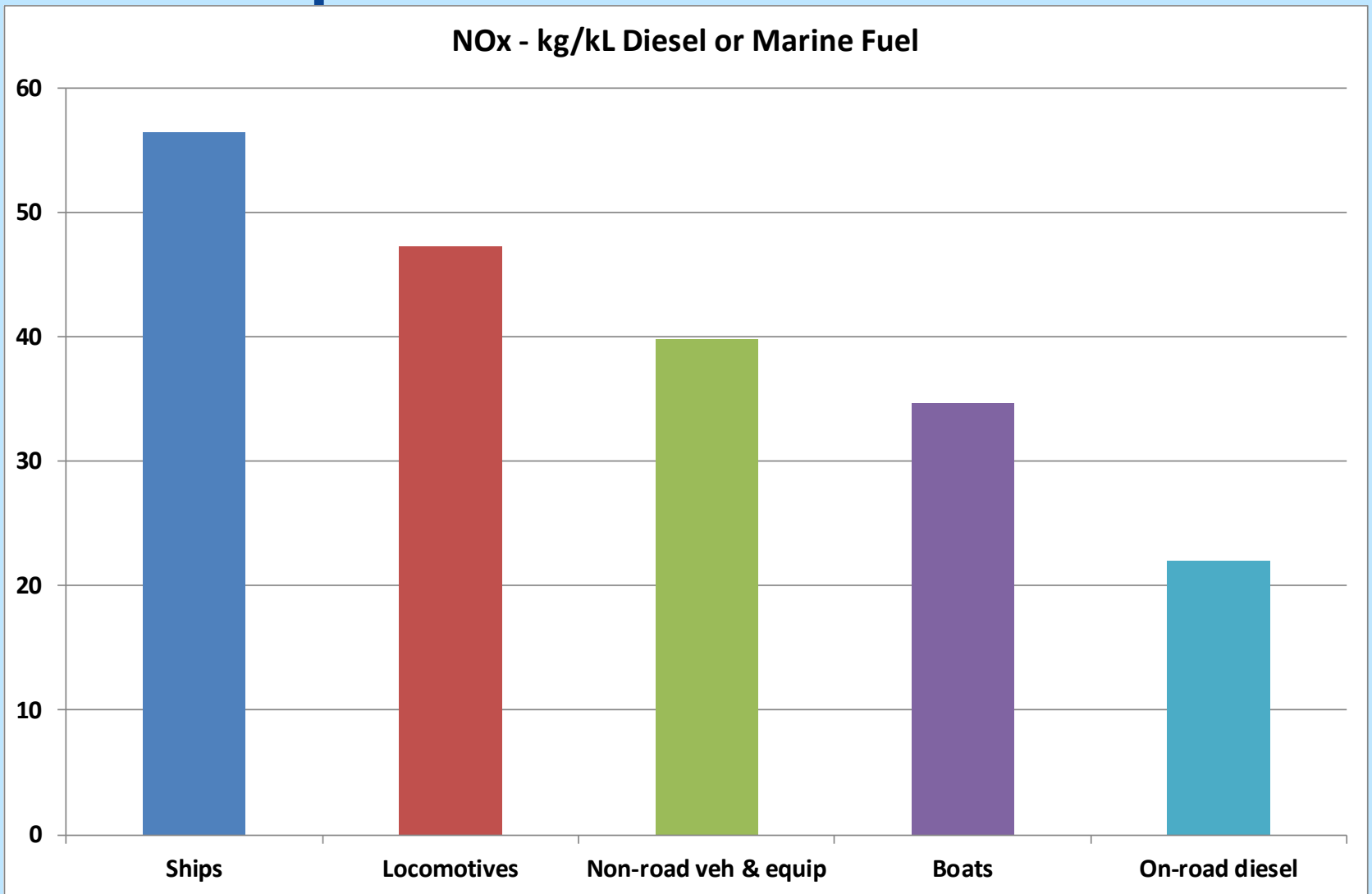


Emissions vs diesel & marine fuel consumption



Performance of major diesel & marine fuel transport emission sources



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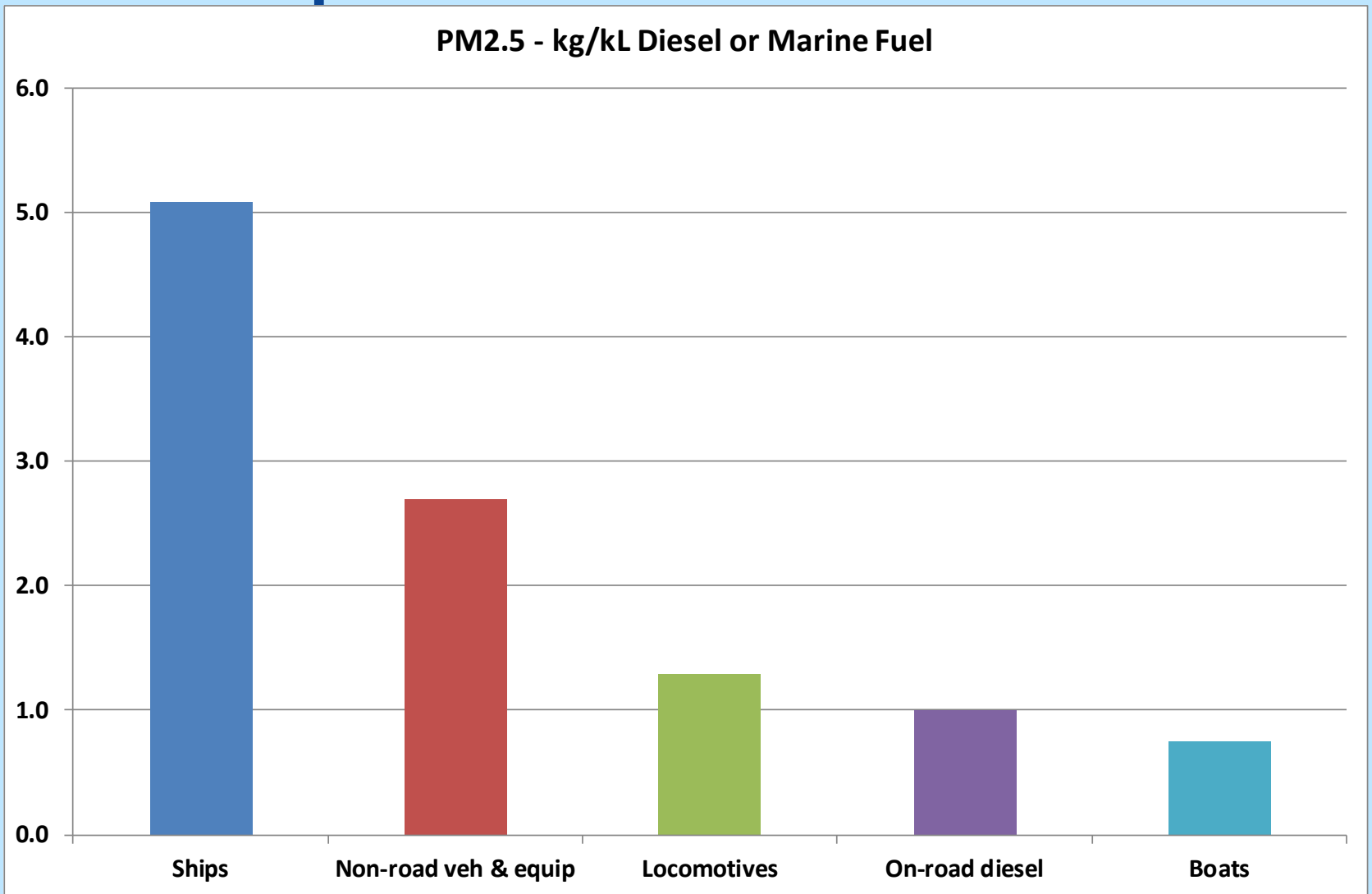
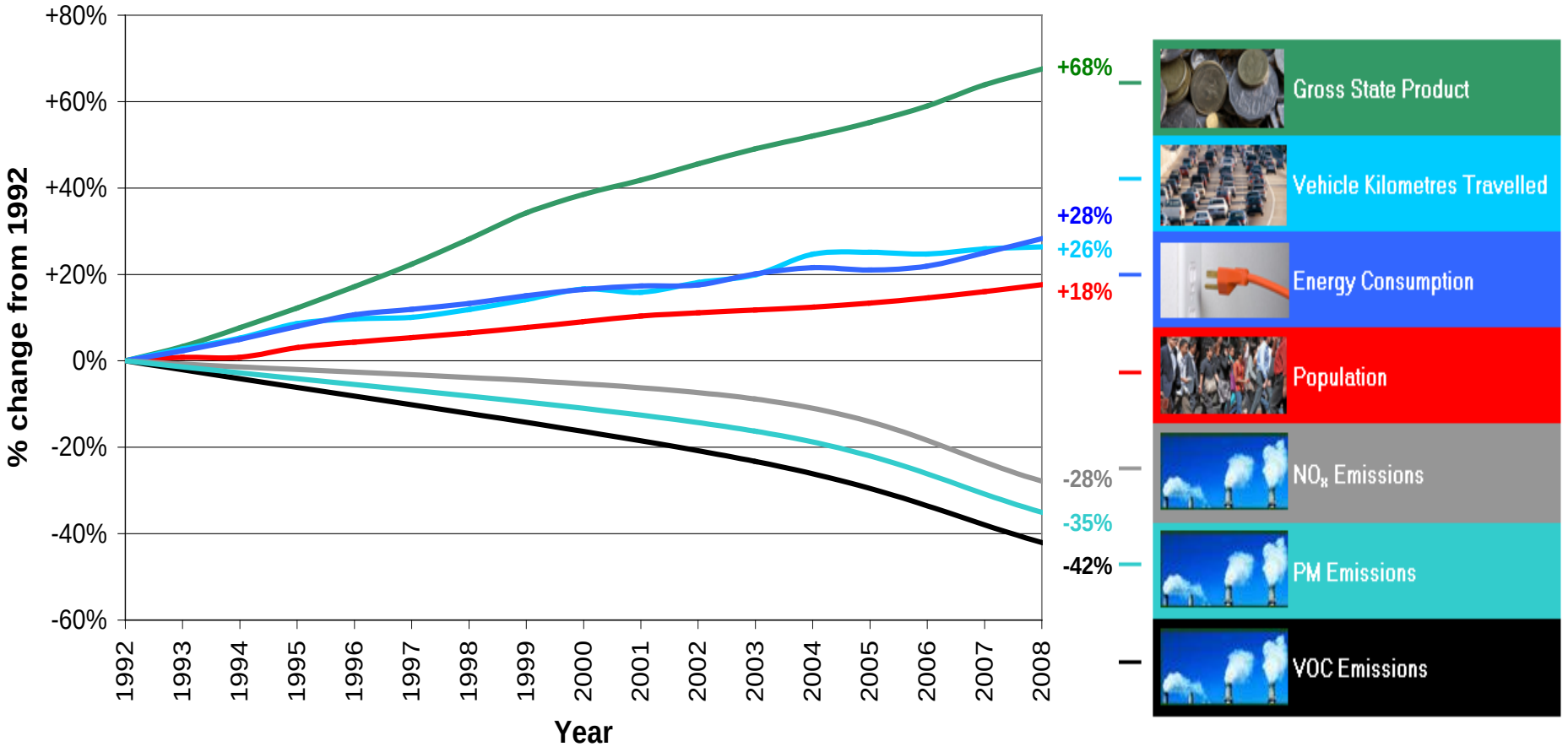
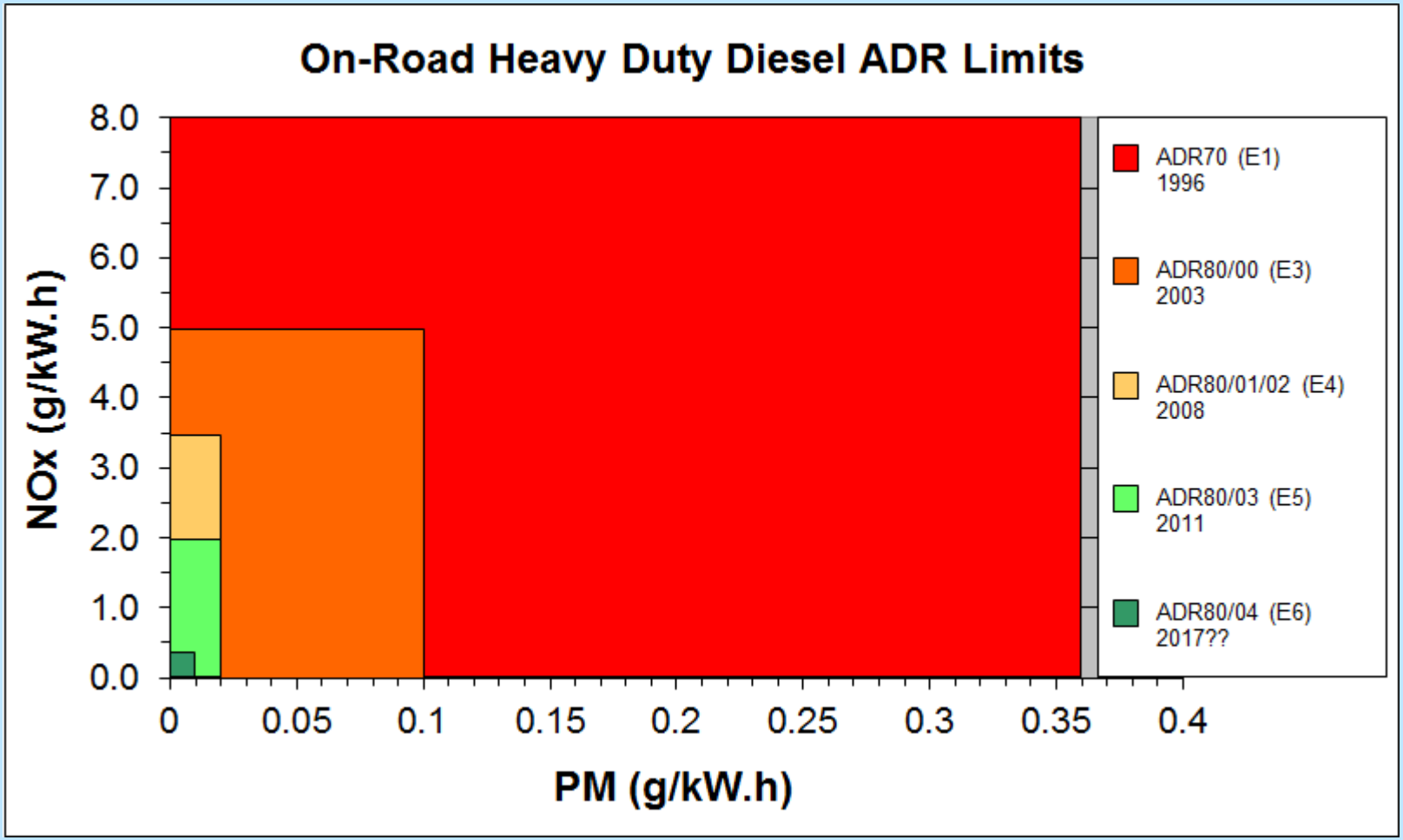


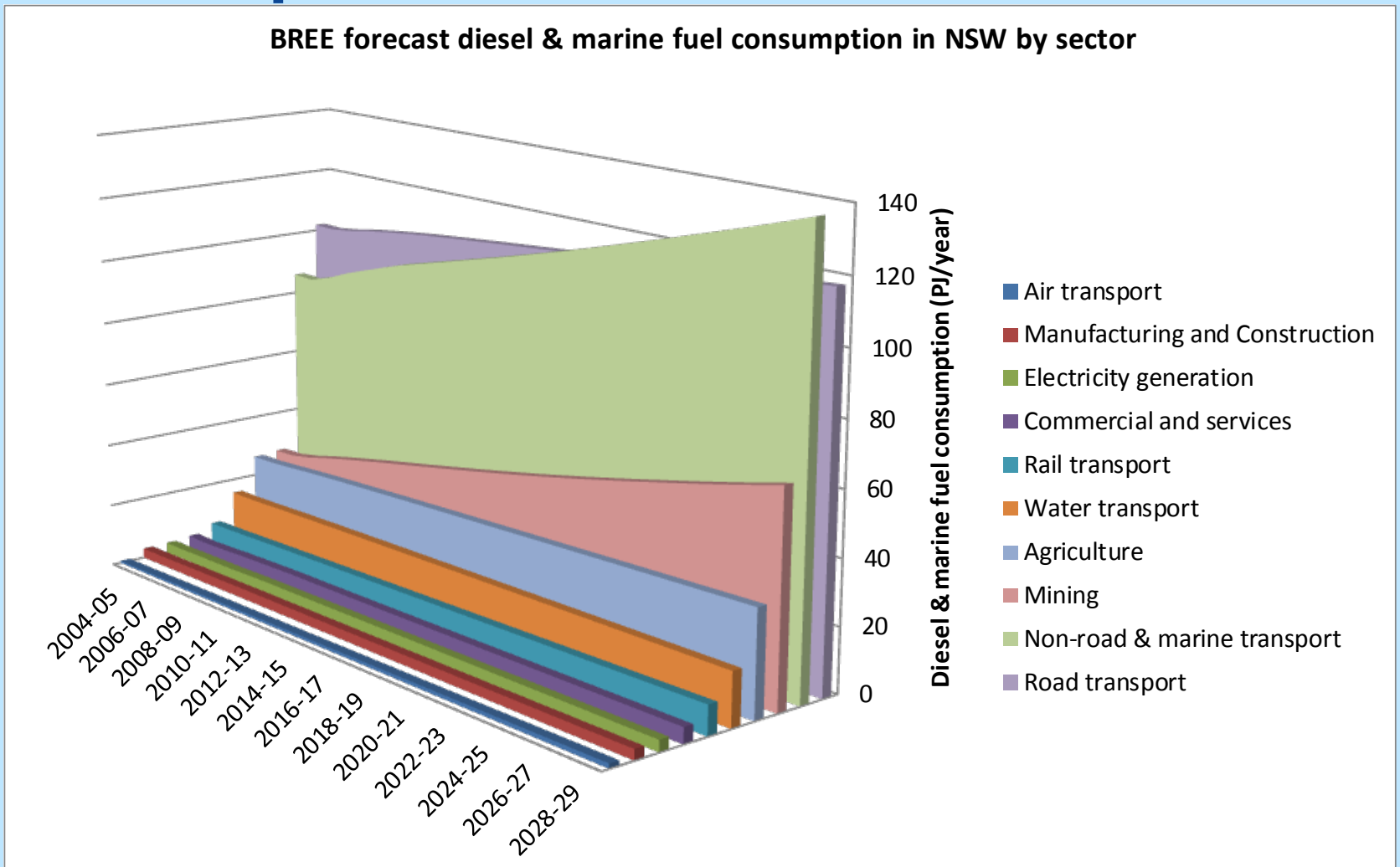
Anthropogenic emissions declining in Sydney



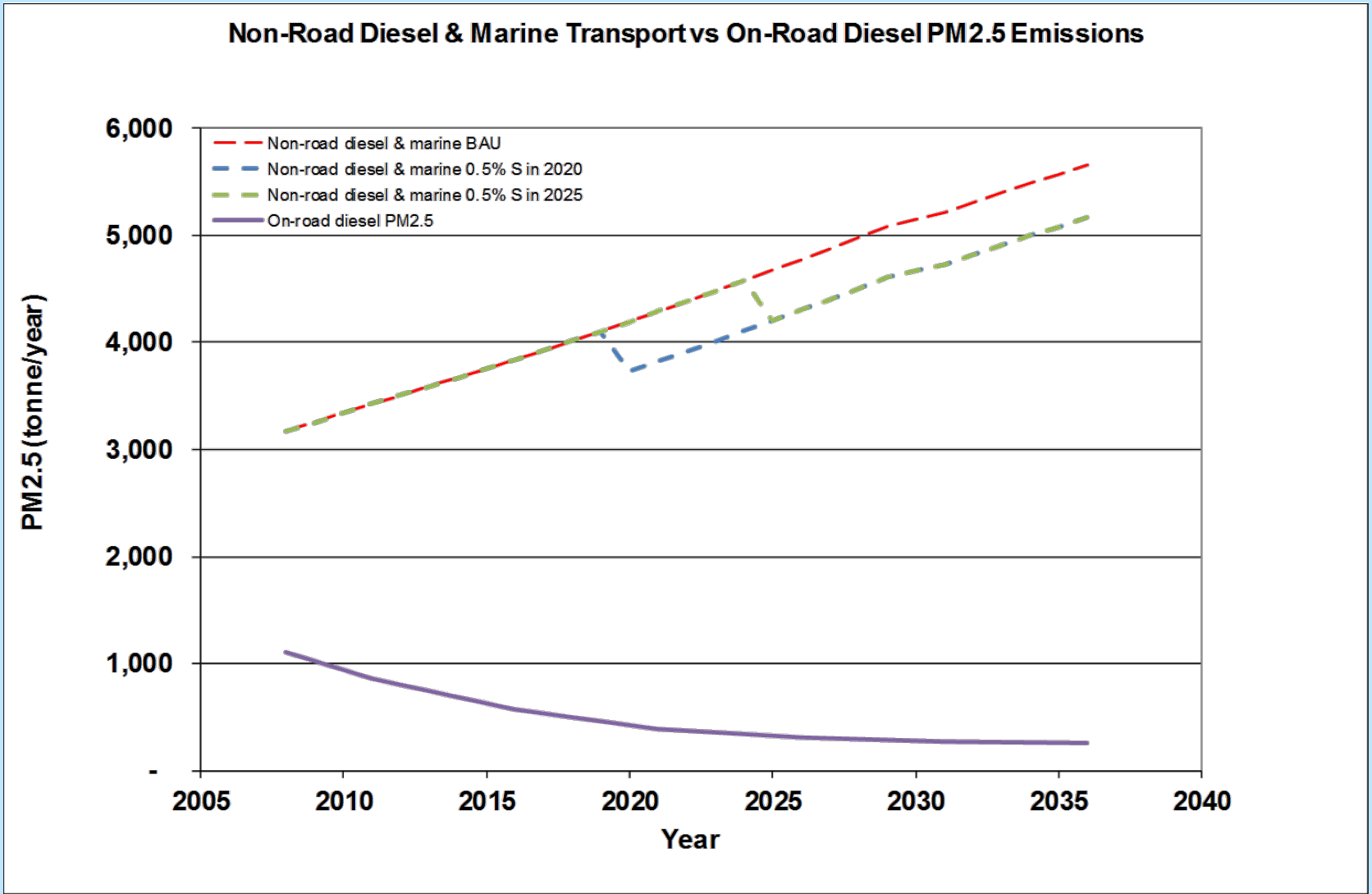
ADRs for on-road diesels getting tighter



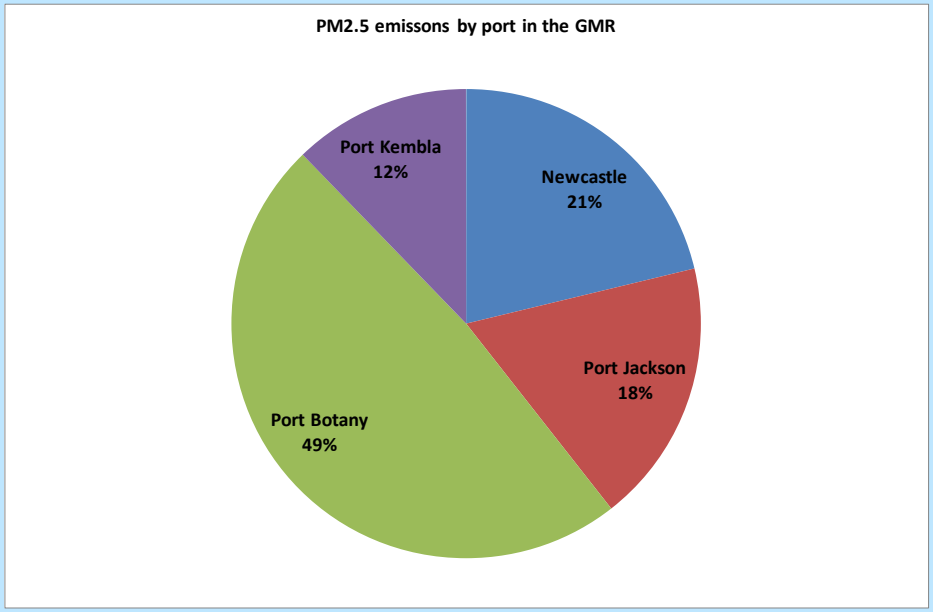
Future diesel & marine fuel consumption

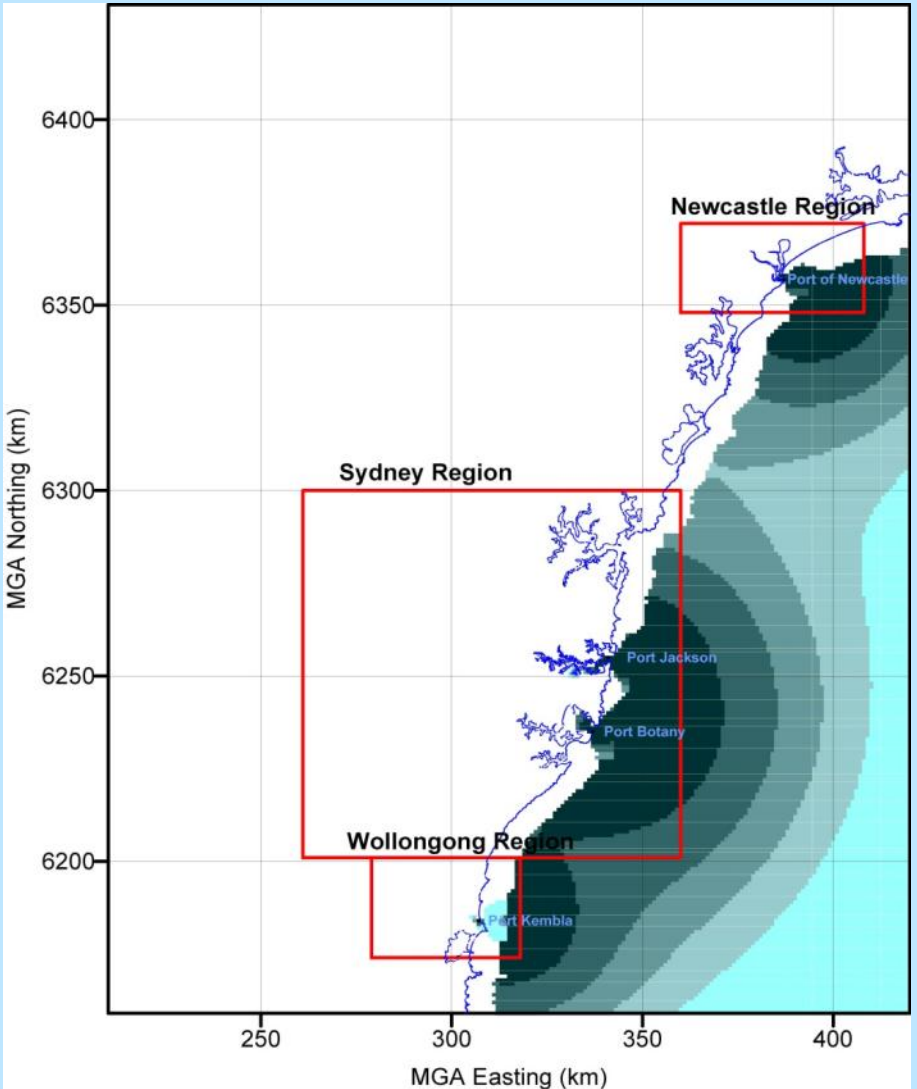


Future diesel & marine fuel transport emissions



Where do marine fuel transport emissions occur





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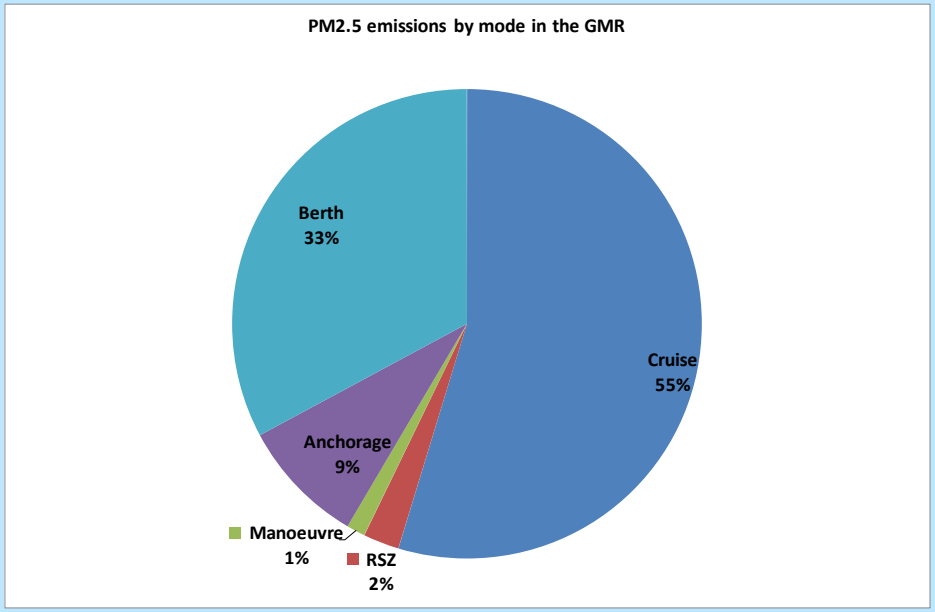
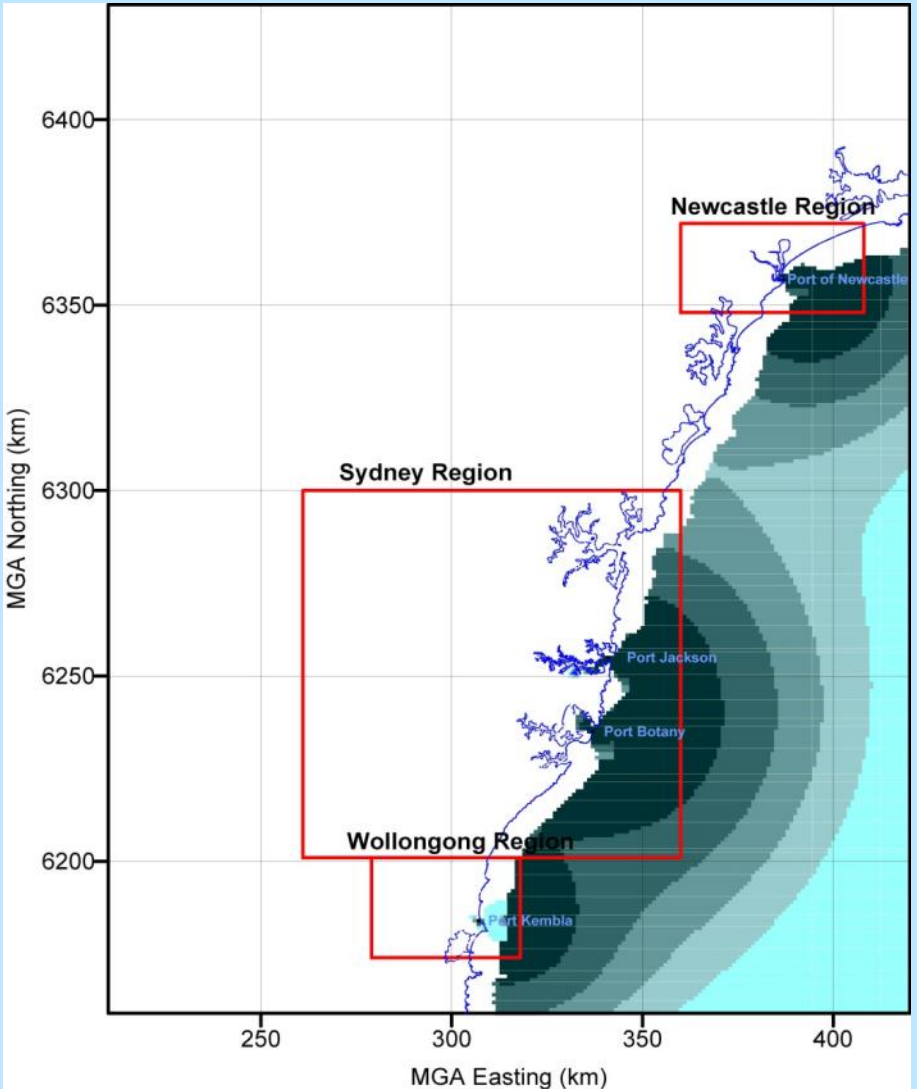
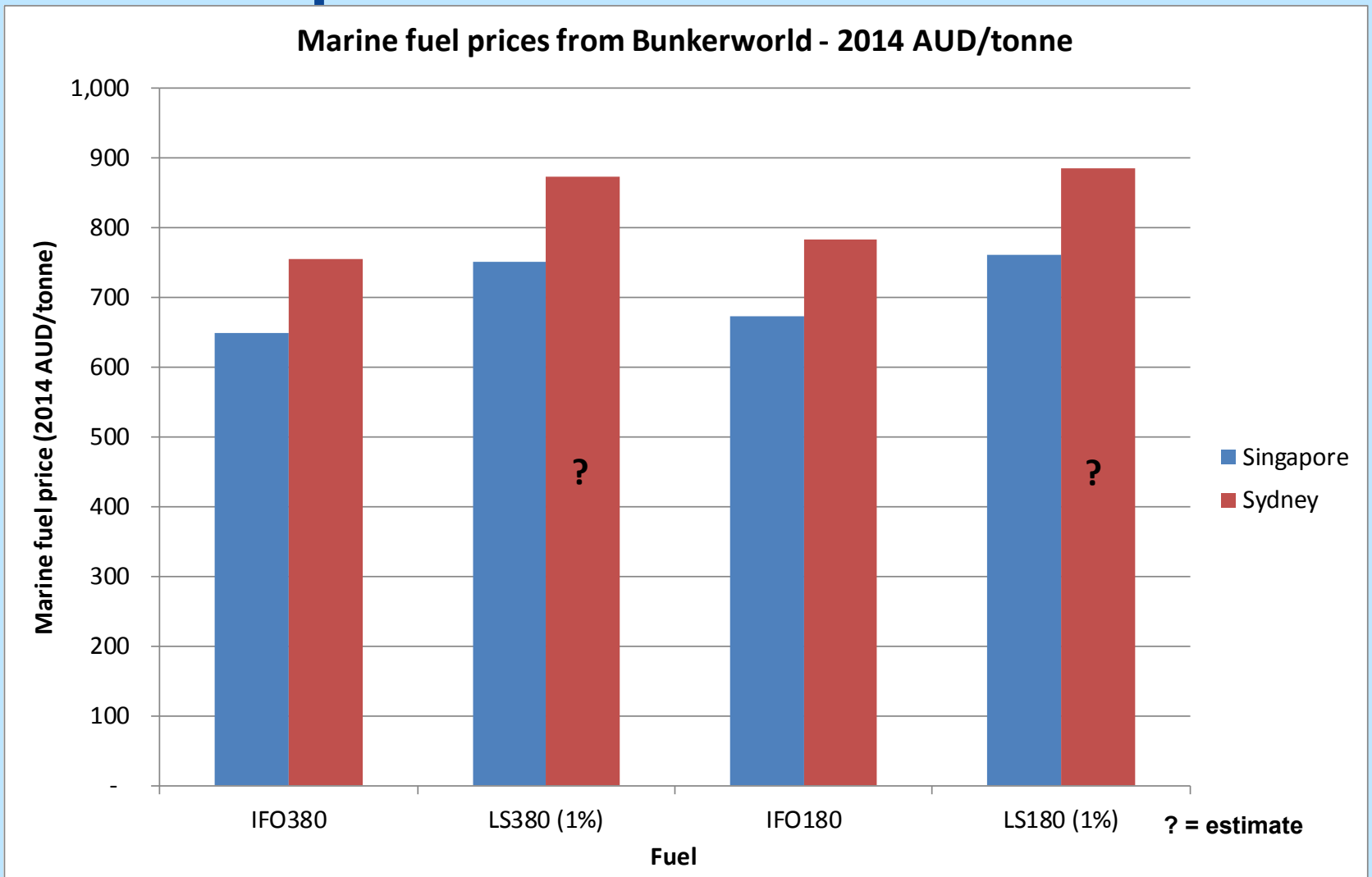




Potential benefits of reducing marine fuel transport emissions



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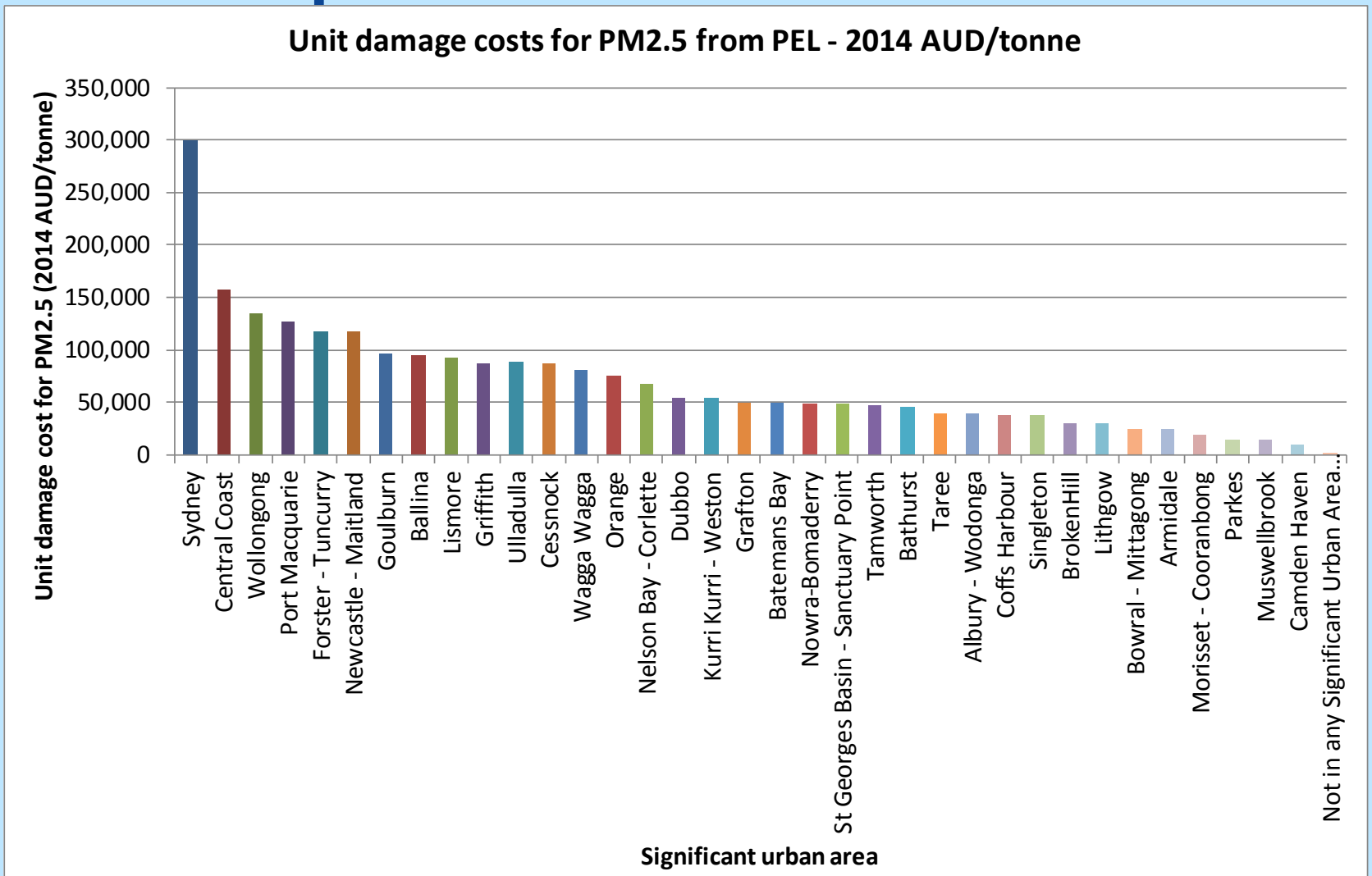

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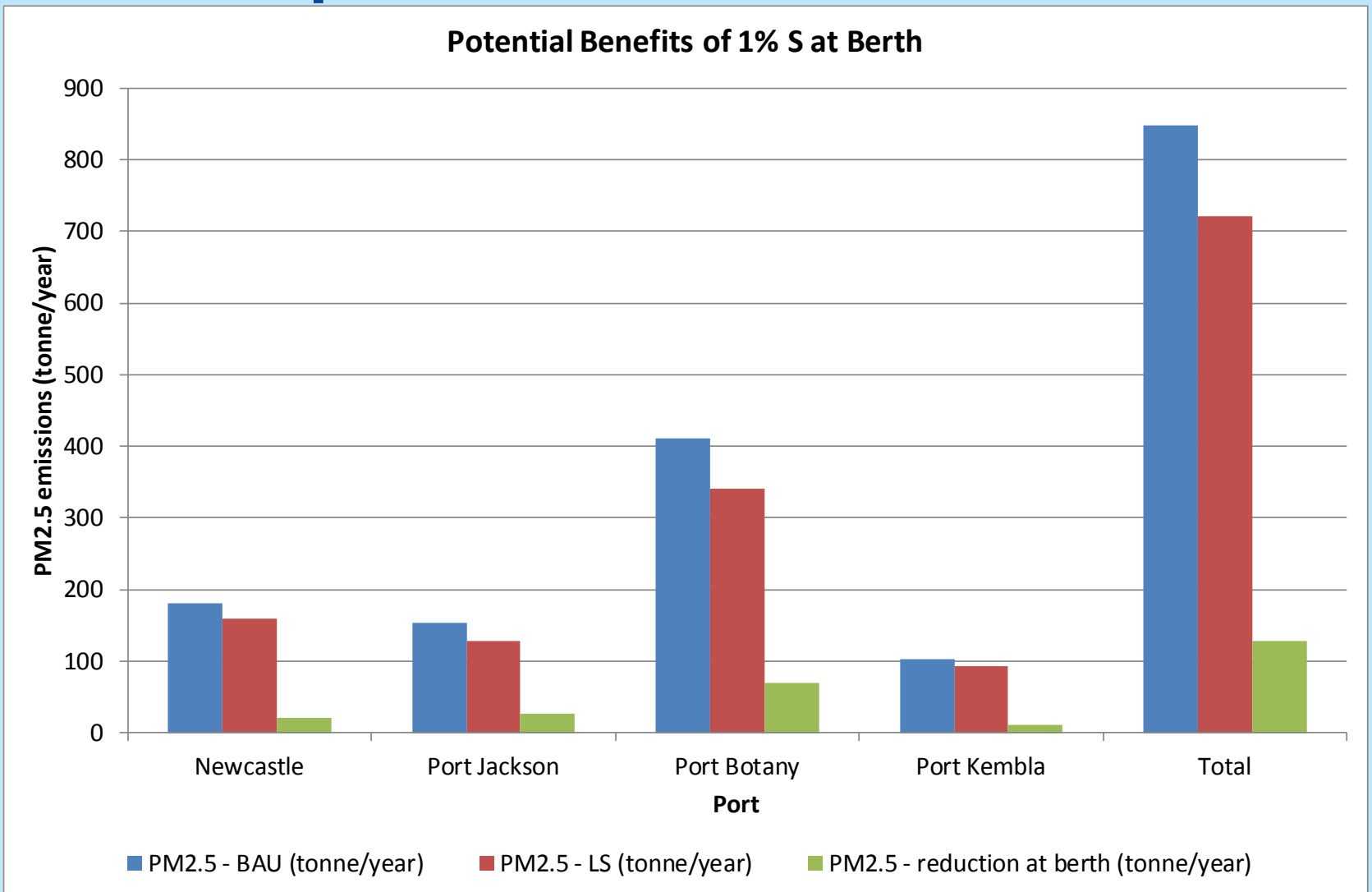

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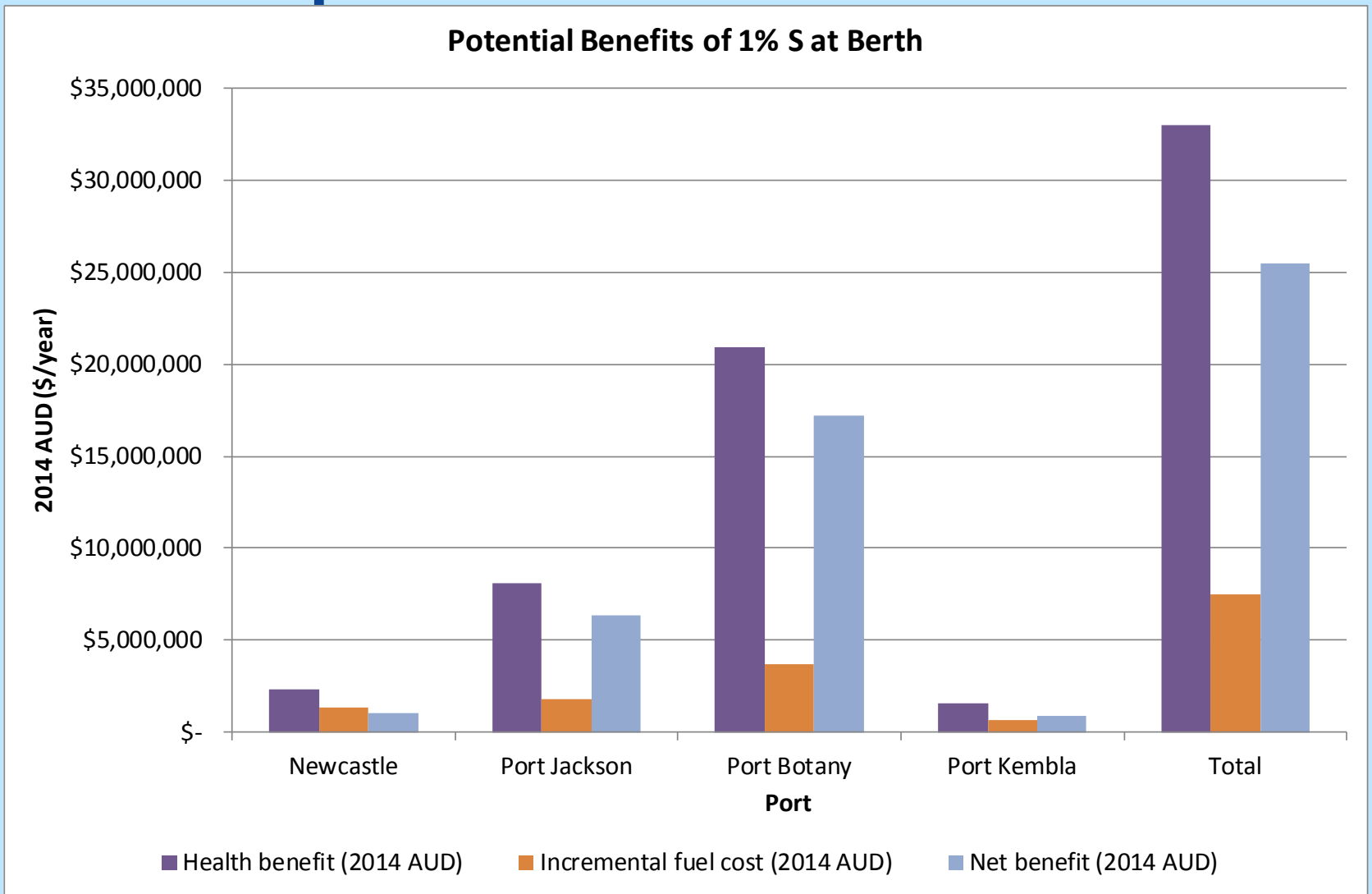

Conclusions

- 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?