Submission to the Department of the Environment

on the

Working towards a National Clean Air Agreement Discussion Paper

5 May 2015

ABOUT AIP

The Australian Institute of Petroleum (AIP) was established in 1976 as a non-profit making industry association. AIP's mission is to promote and assist in the development of a sustainable, internationally competitive petroleum products industry, operating efficiently, economically and safely, and in harmony with the environment and community standards. AIP provides a wide range of factual information and industry data to assist policy makers, analysts and the community in understanding the key market, industry and other factors influencing Australia's downstream petroleum sector.

AIP is represented on key statutory and advisory bodies including the National Oil Supplies Emergency Committee (NOSEC), the Fuel Standards Consultative Committee (FSCC), the Oil Stewardship Advisory Council (OSAC), the New South Wales Biofuels Expert Panel and the National Remediation Framework Steering Group (NFRSG). AIP sponsors or manages important industry health and environmental programs and the Australian Marine Oil Spill Centre (AMOSC) is a wholly owned subsidiary of AIP.

AIP is pleased to present this Submission to the Australian Department of the Environment on behalf of AIP's core member companies:

BP Australia Pty Ltd
Caltex Australia Limited
Mobil Oil (Australia) Pty Ltd
Viva Energy Australia Limited

About AIP Member Companies

AIP member companies operate across the liquid fuels supply chain including crude and product imports, refinery operations, fuel storage, terminal and distribution networks, marketing and retail. Underpinning this supply chain is considerable industry investment in supply infrastructure, and a requirement for significant ongoing investment in maintaining existing capacity. Over the last decade, AIP member companies have invested over $10 billion to maintain the reliability and efficiency of fuel supply meeting Australian quality standards.

AIP member companies play a very significant role in delivering the majority of bulk fuel supply to the Australian market.

- In relation to conventional petroleum fuels, AIP member companies operate all major petroleum refineries in Australia and supply around 90% of the transport fuel market.
- In relation to gaseous fuels, AIP member companies are the major suppliers of bulk LPG to the domestic market, representing around two thirds of the market.
- In relation to biofuels, AIP member companies are the largest suppliers of ethanol and biodiesel blended fuels and blended biodiesel to the Australian market.

Given this background and their significant role in the Australian fuels supply chain and broader economy, AIP member companies have a very strong interest in the urban air quality and climate change emissions, particularly, the emissions from motor vehicles and the relationship to fuel quality standards. Background information on the downstream petroleum industry is contained in the AIP publication Downstream Petroleum 2013 (http://www.aip.com.au/topics/new.htm) and the AIP submission to the Energy White Paper process (http://www.aip.com.au/topics/submissions.htm).

Contact Details

Should you have any questions in relation to this submission, or require additional information from AIP, the relevant contact details are outlined below.

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Key Messages

- The Australian Institute of Petroleum (AIP) acknowledges the contribution of emissions from the consumption and distribution of petroleum products to urban air quality and climate change.
- AIP strongly advocates for environmental policy that is based on sound science and thorough economic analysis, is harmonised across jurisdictions and is acceptable to the community and industry.
    - It is also critical that policy is enforced and applied appropriately to all sources of emissions, taking into account man-made and natural sources.
- AIP considers that the National Clean Air Agreement (NCAA) as proposed in the discussion paper builds on the significant gains that have already been made in improving urban air quality and fosters the cooperative approach between industry and government to policy development. Therefore the NCAA has the potential to improve Australia's urban air quality policy as long as:
    - rigorous and consistent emission inventories and forecasts are undertaken by each jurisdiction (as required by the National Environment Protection Measures (NEPM) process) to assess the relative contributions from emission sources and to assist in the prioritisation of policy proposals
    - policy proposals that are only relevant to individual jurisdictions are only implemented where there is demonstrated need in that jurisdiction (informed by the emissions inventory forecasts) and subject to a net community benefit requirement
    - nationally consistent policy is implemented by the Commonwealth Government where there is a demonstrable case for harmonisation and consistency such as in the regulation of fuel quality standards
    - extensive consultation on the emission inventory forecasts and subsequent policy proposals is conducted with industry and relevant stakeholders, including best practice regulation impact assessment
- AIP considers that the proposed work plan in the NCAA is achievable and will build on the policy initiatives already in place and will seek to cover the gaps in emission sources that are not currently addressed.
- AIP strongly supports the retention of the national fuel quality standards framework. The review foreshadowed in the proposed NCAA work plan can identify further improvements to reduce the regulatory burden and improve the efficacy of the legislation.
- AIP considers there is no prima facie case for review of sulfur in petrol and significant evidence has been provided to demonstrate that there are no operability and minimal environmental benefits from any further changes to fuel standards.
    - The available evidence has been canvassed in detail in the consideration of Euro 5/6 motor vehicle emission standards and the AIP submission is available at the following link: http://www.aip.com.au/topics/submissions.htm
- Any further changes to fuel standards will threaten the viability of the Australian refining industry.

Petroleum consumption and urban air quality

The downstream petroleum sector undertakes the refining, distribution and retailing of liquid fuels to Australian motorists and commercial customers. The efficient and reliable supply of petroleum products is a daily essential for personal mobility, the supply of goods and services to the consumers and underpins the competitiveness of the major export industries of mining, agriculture, transport and tourism.

The major source of emissions from petroleum products are from the use of petroleum products in motor vehicles, shipping and equipment. The major pollutants are hydrocarbons, carbon monoxide, particulate matter (PM_{10} and $PM_{2.5}$) and oxides of nitrogen (NO_x) and carbon dioxide (CO_2). The National Greenhouse Gas Inventory reported that transport emissions were 92 million tonnes (Mt) of CO_2 equivalent or 17 per cent of Australia's total emissions.

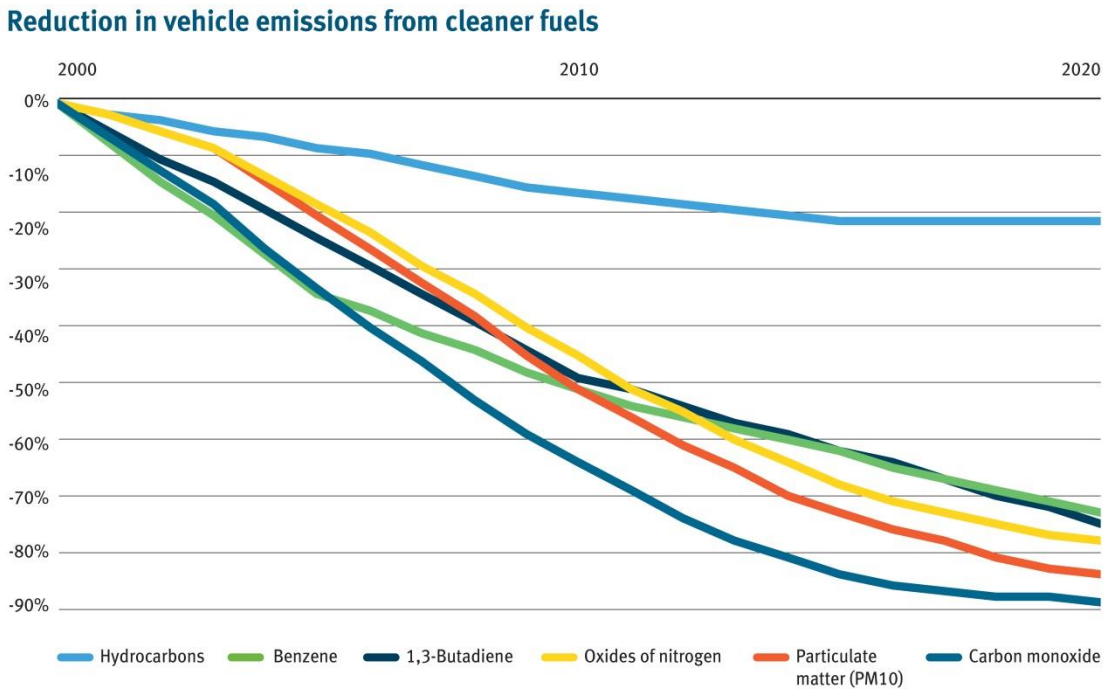
Australian oil refineries are less significant emitters with almost 4 million tonnes of CO_2 equivalent. There are also emissions of particulate matter, oxides of nitrogen (NO_x), sulfur dioxide and hydrocarbons that are regulated as licence conditions by state EPAs.

There is a relatively small proportion of pollutants that are associated with NO_x and evaporative emissions of hydrocarbons. For example, the contribution of retail service stations account for a relatively small proportion of the total pollutant load. However, there is a significantly greater contribution to evaporative emissions from vehicles and non-road equipment such as boats and garden equipment, which need to be addressed.

Regulators recognised that a significant issue for urban air quality was emissions from the use of petroleum products. As noted in the NCAA discussion paper, the Commonwealth has taken the lead in addressing these emissions through the regulation of road vehicle emissions by the Motor Vehicle Standards Act 1989 (MVSA) and fuel quality by the *Fuel Quality Standards Act 2000* (FQSA). Air emissions inventories indicate that while emissions have been substantially reduced by emission ADRs and fuel quality regulation, there are still some significant fuel-related emissions that could be tackled under the NCAA work plan.

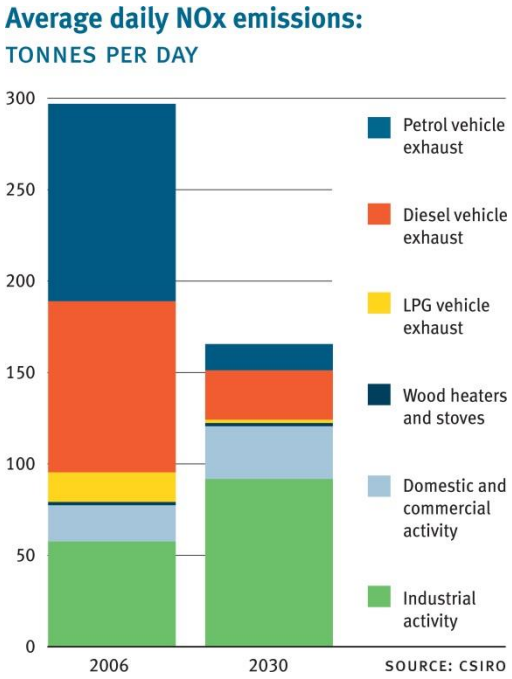
AIP strongly supported the national approach to regulation of motor vehicle standards and fuel quality because the industry recognised there was significant community benefit to reducing motor vehicle emissions. The following chart is drawn from the Regulation Impact Statement (RIS) conducted for the introduction of the FQSA and identifies quite substantial reductions in pollutants that are derived from the introduction of cleaner fuels and the facilitation of cleaner motor vehicle technologies.

The positive impact of cleaner fuels is realised in two ways. Firstly, there is a direct reduction in emissions when the cleaner fuels are introduced into the existing fleet. Secondly, cleaner fuels lead to the introduction of more advanced engine technologies and exhaust treatment systems which lead to an ongoing reduction in emissions as the fleet is replaced. The reductions in motor vehicle emissions are largely realised as the fleet is replaced over a 10-15 year ongoing cycle as demonstrated in the following chart.



AIP has strongly advocated since 2005 that further work to estimate and update the projections for motor vehicle emissions should be aggregated at a national level to demonstrate the success of the cleaner fuels and motor vehicles national policy and to provide a tool for prioritising any further abatement measures in the transport sector.

A report by the EPA Victoria, *Future Air Quality in Victoria –Final Report* conducted in 2013 demonstrates that motor vehicle fleet replacement will continue to bring significant ongoing improvements in urban air quality. The following chart from the report projects that by 2030 motor vehicle emissions will become a relatively small source of emissions compared to other domestic and industrial sources.



AIP considers that similar trends will be evident in other jurisdictions which would see a fundamental change in the sources of emissions in individual air sheds. Given these potentially dramatic shifts in emission sources, AIP considers that it is essential that, as part of the NCAA, each jurisdiction should

construct forecasts of their expected air quality performance by source to maintain the momentum of already implemented policy and to assist in identifying the priority policy proposals in the future, which should ideally be tackled at a national level.

A further key contributor to the effectiveness of the policy response to motor vehicle emissions was the ongoing and central engagement of the key stakeholders in the motor vehicle industry and the downstream petroleum industry. This engagement was able to provide a coordinated introduction of the fuels and vehicles framework with very few transitional issues, and should be maintained during the development of the NCAA and into the future.

Harmonisation of policy measures

The downstream petroleum industry operates across Australia and is subject to a range of regulations in each jurisdiction that entail significant regulatory and compliance costs. Given the lack of consistency between councils, local government regulation can give rise to greater costs than at the Commonwealth-State level. A good example is the environmental regulation of service stations.

AIP considers that there are major benefits in pursuing national harmonisation of these regulations. The benefits of such action would include common and consistent national frameworks that would lower costs for regulators and industry and lead to greater certainty in regulatory outcomes.

Particular areas of policy concern include:

- ambient air quality
- assessment of site contamination
- remediation of contaminated sites
- underground petroleum storage systems
- retail site regulation including local council development approvals (for example, in relation to stormwater management)
- ad-hoc greenhouse gas abatement measures.

Various models could be pursued to harmonise regulations in these areas or to improve the level of harmonisation, including:

- formal intergovernmental agreements with mirror legislation in each jurisdiction, along the lines of the National Environment Protection Measures (NEPM) process (but noting the need to streamline the unwieldy review process)
- jurisdictional implementation of independently developed national guidelines (which may be supported by a practitioner accreditation program or regulator education program)
- overriding Commonwealth legislation.

Air quality across Australia is regulated by the Ambient Air Quality (AAQ) NEPM which requires jurisdictions to undertake and report air quality monitoring against the NEPM standards. As previously discussed, air quality in Australian cities is forecast by CSIRO to improve despite population growth. The main anthropogenic sources of pollution will change from motor vehicle emissions to other sources such as gas-fired industrial development, and a range of general sources such as aerosols, small engines and solvents. Bushfires are also a major source of particulate matter pollution. The AAQ NEPM has provided a useful tool for assessing air quality performance and has helped regulators to demonstrate to the community improvements in urban air quality on a comparable basis across the country. This NEPM is considered to provide a sound, logical platform for measuring and monitoring air quality across the nation.

A key regulatory contribution by the Commonwealth Government to improve air quality was the implementation of the *Fuel Quality Standards Act 2000* (FQSA) which replaced existing State Government legislation (where it existed) for most fuel quality parameters. The Australian downstream petroleum industry implemented diesel standards that are at world's best practice and petrol standards

that are appropriate for Australian conditions. The implementation of the national fuel quality standards involved expenditure by the downstream petroleum sector of over $3 billion and led to the closure of the Port Stanvac refinery in Adelaide.

AIP notes that a review of the fuel quality standards legislation is listed as a potential new activity under the work program for the NCAA. We understand that the review of fuel quality standards will consider whether the current framework continues to be appropriate for managing fuel quality in Australia. AIP strongly supports the retention of the national fuel quality standards framework and welcomes the proposed review to potentially improve its operation.

The current fuel quality regulatory framework provides a sound, harmonised basis for fuel supply in Australia and is supported by a robust compliance mechanism to tackle non-compliance by fuel suppliers. This legislation provides a good example of soundly based and structured environmental legislation that facilitates fuel market operations in Australia, while also ensuring appropriate quality fuel (i.e. that meets vehicle operating requirements) is available for consumers.

The national approach to fuel quality while underpinning urban air quality improvements in all Australian jurisdictions also provides other significant benefits that include:

- National interest
    - it allows the Australian Government to set fuel specifications cognisant of Australian conditions
        - Methyl Tertiary Butyl Ether (MTBE) is a groundwater contaminant that is widely used in fuel in Asia and Europe but is banned in Australia by the FQSA because of excessive risk of groundwater contamination
        - Cetane levels in diesel as regulated by the FQSA recognise the composition of the Australian diesel fleet as being a mix of models from US, Japan and Europe
- Consumer and government revenue protection
    - the FQSA helps to ensure that appropriate quality fuel is delivered to customers
        - the practices of fuel substitution (e.g. the addition of solvents and excessive ethanol levels in petrol, and the addition of waste oil to diesel) and consequent excise fraud that were prevalent before the introduction of FQSA have been largely eradicated by direct prohibition under the FQSA
- Supply reliability
    - assists in the maintenance of liquid fuel supply by ensuring one grade is interchangeably supplied throughout Australia
        - fuel can be readily diverted to jurisdictions across Australia in the event of supply disruption in one jurisdiction
    - traders operating in markets that are sources of Australian imports are well versed in supplying Australian specification fuels and there is wide availability of the Australian specification fuels
- Supports other policy and legislative frameworks
    - the fuel quality framework is embedded/referenced in other Commonwealth legislation such as fuel customs and excise regulations, and the National Liquid Fuel Emergency Response Plan maintained by the National Oil Supply Emergency Committee (NOSEC)

However, state regulation of fuel quality was retained for parameters that were specific to an air shed or specific state circumstances. These state regulations currently apply to fuel quality parameters such as volatility limits in petrol. As a result of unique standards for particular locations, these two tiers of regulation create regulatory complexity and additional costs for fuel suppliers and add to the complexity of supplying fuel to the Australian market. There would appear to be considerable scope to streamline

this regulatory complexity, either through additions to the national fuel standards, or development of an intergovernmental agreement to cover the factors not in the national standard. These approaches could accommodate the need for parameters that require different values for different environmental circumstances such as petrol volatility.

In addition to fuel standards regulations, each state government uses a mix of emission abatement technologies aimed at improving urban air quality by capturing fuel vapours at fuel handling sites; these are stage one vapour recovery ('VR1' – at major fuel handling depots and delivery of fuel to service stations) and stage two vapour recovery ('VR2' – at service stations and on fuel bowsers). Refineries and major fuel terminals have stringent conditions under their State EPA licences. Local councils can also implement their own requirements for vapour recovery at petrol stations. This is despite air quality being a regional issue (as air sheds cross council boundaries), and is not an effective or recommended approach to reducing emissions.

As a result there is little consistency across jurisdictions for addressing the relatively small proportion of evaporative emissions from service stations The application of measures does not always apply to all market participants, and even where the measures do, there is often an absence of an effective compliance regime (either non-effective forms of regulation and/or an absence of resources to monitor and prosecute non-compliance). As a consequence there is a complexity of regulatory requirements and a significant 'free-rider' issue which creates a competitive disadvantage for the compliant operators.

In the case of VR2, the relatively low emissions from vehicle refuelling could potentially be addressed more cost-effectively by inexpensive vehicle technology known as on-board refuelling vapour recovery (ORVR) to capture the vapour, while providing a benefit to motorists through fuel savings. Such technology is standard in the United States so could potentially be required in all vehicles imported to Australia under the Australian Design Rules (ADRs). However, lack of interest in a uniform national approach from state jurisdictions (including NSW) has resulted in less cost-effective air quality mitigation through VR2 being adopted in NSW. VR2 was rejected in Victoria following regulatory review on the grounds it was not cost-effective.

Sulfur in petrol

AIP notes that there is no specific undertaking in the NCAA discussion paper to review the sulfur levels in petrol and we understand that the fuel standards review foreshadowed will not be considering individual fuel standards parameters.

AIP considers that this NCAA proposal is appropriate as there is no prima facie case for review of sulfur in petrol and significant evidence has been provided to demonstrate that there are no operability and minimal environmental benefits from any further changes to fuel standards. There would be an increase in oil refining emissions as a result of increased processing of the fuel to meet the lower standard for both urban air quality and climate change emissions.

Moreover, there is no operability impediment to the entry of fuel efficient cars to the Australia market because of fuel quality.

The technical justification and evidence underlying the AIP position is contained in the AIP submission to the Regulation Impact Statement on the Euro5/6 vehicle standards which available at the following link.

http://www.aip.com.au/topics/submissions.htm

The key conclusions of the AIP submission as supported by the available evidence are:

- Long term use of higher sulfur fuels (up to 150ppm sulfur) will not cause significant impairment of catalysts and any effects will be largely reversible.
- Reducing the sulfur content of petrol from 150ppm to 50 ppm would only deliver limited environmental benefits in terms of reductions in tailpipe emissions
- Tailpipe emissions improvements from lowering sulfur to 50ppm occur for some criteria pollutants (carbon monoxide and hydrocarbons) that are not a concern in Australia.
- 50ppm sulfur petrol is readily available in Australia.
- Future motor vehicle technology developments may require higher octane fuels such as Premium Unleaded Petrol (PULP).
- The production of 50ppm sulfur ULP would increase emissions and costs at Australian refineries.
- The introduction of a 50ppm sulfur ULP fuel standard would adversely affect the ongoing viability of some Australian refineries and is likely to lead to the closure of some of the remaining Australian refineries.
- The introduction of a 10ppm sulfur standard across all grades of petrol would significantly threaten the ongoing viability of the Australian refining industry.