

DOWNSTREAM Petroleum



NATIONAL FUEL QUALITY STANDARDS





KEY MESSAGES

- The Australian Government regulates fuel quality standard with a view to improving urban air quality (reduced smog and particulates), reduce greenhouse gas emissions, and improve vehicle fuel efficiency. Standards can also facilitate the introduction of advanced engine technologies.
- Cleaner fuels require major refinery investment, cost more to produce and lead to higher CO2 emissions from refineries.
- AIP and member companies support improved fuel standards and are working towards meeting the Government's implementation date of 2027.





AIP supports appropriate national fuel quality standards to facilitate the introduction of advanced engine technologies and so help reduce scientifically established urban air quality impacts.

The Fuel Quality Standards Act 2000 provides the regulatory framework for fuel quality standards in Australia. AIP continues to work closely with governments and the motor vehicle industry to ensure that fuel quality standards are consistent across Australia, and predictable, so that participants in the market have sufficient time to implement and adjust to any new standards. Over the past decade the Australian refining sector has invested well over \$3 billion to implement the Australian Government's Cleaner Fuels Program.

This program was designed to help significantly improve urban air quality, including an 80 per cent reduction in nitrogen oxides by 2020. New vehicle technologies, particularly high compression, direct injection petrol engines and high compression, common rail diesel engines will enable further improvements in fuel economy and lower emissions to be achieved.

REDUCTION IN VEHICLE EMISSIONS FROM CLEANER FUELS



Modelling of Victorian air quality by CSIRO confirms these reductions in motor vehicle emissions and projects that by 2030 emissions from motor vehicles will become a relatively small source of nitrogen oxide emissions compared to other domestic and industrial sources.

AVERAGE DAILY NOX EMISSIONS:

- Petrol vehicle exhaust
- Diesel vehicle exhaust
- LPG vehcile exhaust
- Wood heater and stoves
- Domestic and commercial activity
- Industrial activity

REFORMS TO AUSTRALIAN FUEL STANDARDS

In late 2016, the Australian Government established a Ministerial Council on Vehicle Emissions to review Australia's fuel standards, along with reviews into both vehicle emissions standards to reduce noxious emissions, and fuel efficiency standards to reduce carbon emissions.

Following broad and extensive consultation, the Government announced in 2019 that the best option to meet its objectives is to:

- Reduce sulfur in petrol to 10 parts per millions from 1 July 2027
- Retain regular unleaded petrol
- Reduce the pool average of aromatic content in petrol from 42 per cent to 35 per cent, effective 1 January 2022
- Review the aromatic content in petrol limit by 2022 to set a reduced limit by 2027 or establish an alternative solution
- The Department is continuing to consult with industry on the remaining parameters in the fuel standards to finalise these before the current standards sunset on 1 October 2019.

This timeline for implementation provides the best balance between delivering environmental improvements and minimising any impacts on consumers, whilst also providing long term policy certainty to the local refining industry to facilitate potential investment and business decisions. It also provides certainty for the vehicle industry over the next decade to facilitate the introduction of the latest vehicle technologies.

Source: CSIRC

THE GOVERNMENT'S DECISION ALSO INCLUDES CONCRETE STEPS BY INDUSTRY AND THE GOVERNMENT ALONG THE IMPLEMENTATION TIMEFRAME TO DEMONSTRATE ONGOING PROGRESS.

This includes a substantial review in 2022, to determine aromatic limits in petrol from 2027, when there will be greater clarity in the market and regulatory environment internationally for both the refining and car industries.

AIP public submissions throughout the review process have consistently demonstrated that the sulfur and aromatic levels in petrol available to Australian motorists are already substantially below the regulated limits. Importantly, the Industry has committed to report to Government annually to safeguard this existing fuel quality over the transition period to the commencement of the new petrol standard.



This Government decision, in particular the timeframe provided, acknowledges the very significant investment that would need to be made by the Australian refining industry whilst meeting the challenges of continuing strong competitive pressures from larger refineries in the Asia Pacific region. It highlights the importance the Government places on the economic contribution of domestic refineries, particularly in their local communities, and in supporting supply reliability and security to the local market.

REFINERY TRANSITION TO 10PPM GASOLINE

Australia's four refineries will collectively be required to invest around \$1bn. Refineries also require long lead times to design, construct and commission the necessary infrastructure, whilst also ensuring continuity and security of supply of fuel for all Australians:

- 2 Year pre-FEED (Front End Engineering and Design)
 - \$15m detailed investigations of feasible options including internal and contract resources (internal resources don't exist)
 - complex mathematical models to ascertain feasibility
 - Board or corporate approval for expenditure
 - 5 Year Construction
 - Establishment of engineering project teams
 - Detailed design works across multiple complex refining assets
 - Tendering multiple design packages (e.g. mechanical, civil etc).
 - Detailed discussion with statutory bodies for scope of approvals
 - Community and local industry engagement
 - Coordination of works with operation of existing facilities
 - Pre-commissioning and commissioning of works
- 3 year turnaround (long term maintenance) coordination
 - Each refinery is on a different turnaround cycle
 - Out of program turnarounds greatly increase cost and risk

ASIAN FUEL STANDARDS

Countries in the Asia–Pacific region are mandating cleaner fuels on different timelines. A key driver in a number of cases, particularly China, has been a desire by governments to begin to address extreme urban air quality problems. As demand for higher quality fuels has increased, refineries in the region are now producing these fuels as standard products rather than as boutique fuels for specific markets. This has resulted in increased availability of the cleaner fuels.

PETROL REGULATORY OUTLOOK IN THE ASIA-PACIFIC REGION





DIESEL REGULATORY OUTLOOK IN THE ASIA-PACIFIC REGION

5000 or greater 1000 500 150 50 10



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