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# Feedback/Suggestions on the Fuel Efficiency Standard

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**MAY 2023**

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**Asian Clean Fuels Association (ACFA)**



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Dear Sir/Mdm;

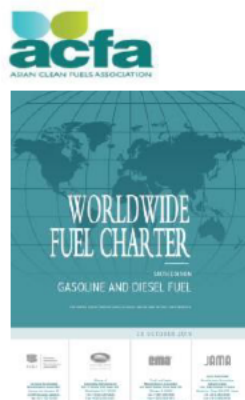
Re: Feedback/Suggestions for Australia's Fuel Efficiency Standard

1. We are pleased to be given the opportunity to provide feedback and suggestions to the paper on Australia's Fuel Efficiency Standard, drafted the Department of Infrastructure, Transport, Regional Development, Communications and the Arts in April 2023. We applaud your initiative and are supportive of introducing an Australian fuel efficiency standard that can increase the supply of low and zero emissions vehicles in Australia to reduce emissions, reduce fuel costs, and achieve Australia's net zero target.
2. We, the Asian Clean Fuels Association (ACFA), believe that the use of cleaner fuels is one of the compelling answers to improving air quality in a prevalent and immediate basis. ACFA is a not-for-profit trade organisation that promotes the use of cleaner automotive fuels. Our core principles are based on sound science and technology, cost efficiency and environmental sustainability. Since our establishment in 2000, we have been working closely with policymakers and regulators in Asia and the Middle East to develop fuel legislation and programs that support the use of cleaner fuels to improve air quality. We work in partnership with international organisations like the United Nations Environment Program and Clean Air Asia, which operates under the auspices of the Asian Development Bank. ACFA has been actively contributing to fuel discussions in Australia since the review of the Fuel Quality Standards and National Clean Air Agreement that was conducted by the Australian Department of Energy in 2015.
3. We would like to provide our feedback and further suggestions to improve the proposed fuel efficiency standards for Australia.
4. The pursuit of electric vehicles (EVs) and hybrids by the government is undoubtedly a significant step towards reducing carbon emissions and transitioning to cleaner transportation options. However, it is important to recognize that conventional gasoline vehicles, including hybrids, can still play a role in this process.
5. One approach to maximize the environmental benefits of conventional gasoline vehicles is to implement a minimum of 95 Research Octane Number (RON) grade and eliminate the 92 RON grade. The RON is a measure of the quality of gasoline, and a higher RON generally indicates a higher quality fuel with better performance characteristics.
6. By mandating a minimum of 95 RON grade fuel, the government can ensure that conventional gasoline vehicles operate more efficiently and produce fewer emissions. Higher RON fuel allows for improved engine performance, reduced knocking, and better combustion efficiency. This

can lead to lower fuel consumption and a decrease in greenhouse gas emissions associated with the combustion of gasoline.

7. Eliminating the 92 RON grade fuel further encourages the use of higher-quality gasoline. By removing this lower-grade option from the market, consumers are more likely to opt for the higher RON fuels available, ultimately leading to better overall environmental outcomes.
8. Additionally, encouraging the use of higher RON fuels can benefit hybrid vehicles as well. Hybrids combine an internal combustion engine with an electric motor to optimize fuel efficiency. By using higher RON gasoline, the combustion engine in hybrid vehicles can operate more efficiently, maximizing the overall fuel economy and reducing emissions.
9. While the long-term goal may be to transition entirely to EVs and other alternative fuel vehicles, it is important to acknowledge that the adoption of such vehicles will take time. In the meantime, improving the fuel quality by implementing a minimum 95 RON grade and phasing out the 92 RON grade can provide immediate environmental benefits. This approach allows conventional gasoline vehicles, including hybrids, to contribute to emission reduction efforts while also incentivizing the gradual shift towards cleaner and more sustainable transportation options.
10. Higher octane trends have been gaining momentum globally as countries strive to improve fuel efficiency, reduce emissions, and meet environmental targets. Here are some key aspects of higher octane trends:

➤ 6<sup>th</sup> edition of World Wide Fuel Charter



Source: *World Wide Fuel Charter 6th Edition 28th October 2019 – ACEA, Auto Alliance, EMA, JAMA*

**World Wide Fuel Charter: Car Manufacturers Ask for Best Fuel Quality**

- Fuel quality is increasingly important for engine/vehicle performance and cleanliness. Sulphur-free & metal-free fuels critical for is ultraclean, efficient and durable technology.
- Category 6 gasoline: lower carbon intensity, enables greater efficiency, has GHG benefits and helps introduction of engines/vehicles with higher fuel efficiency and less exhaust emissions:
  - **Minimum Research Octane Number (RON) = 102**
  - **No intentional addition of metals** (Cu, Fe, Mn, Na, P, Pb, Si, Zn)
  - **No intentional addition of organic contaminants**, like **aniline** and its derivatives
- In line with EU petrol specification (EN228): “Unleaded petrol shall be free from any adulterant or contaminant that may render the fuel unacceptable for use in petrol engine vehicles designed to run on unleaded petrol”. New types of additives and blend-stocks those should be fully tested for potential adverse effects.



*Highest fuel quality is essential  
for engine/vehicle maximum efficiency and lowest environmental impact*

Source: World Wide Fuel Charter 6<sup>th</sup> Edition, 28<sup>th</sup> October 2019, ACEA, Auto Alliance, EMA, JAMA.

The 6th edition of the World Wide Fuels Charter states a preference of higher octane requirement, at either 100 RON (preferred by Japanese Automotive Manufacturers Association, JAMA), or 98RON (preferred by the Automotive Association, AA) and 102RON (preferred by European Automobile Manufacturers' Association, ACEA).

- Developed markets are already planning to adopt 95 RON minimum (Euro 4 and above)

**Current Opinion in Each Region** 3

	RON		Ethanol		Cost Up
	Current	Target	Current	Target	
US	92	98 (+6)	E10	E10	
EU	95	102 (+7)	E10	E10	
JAPAN	90	>98 (+8)	E0	E0	

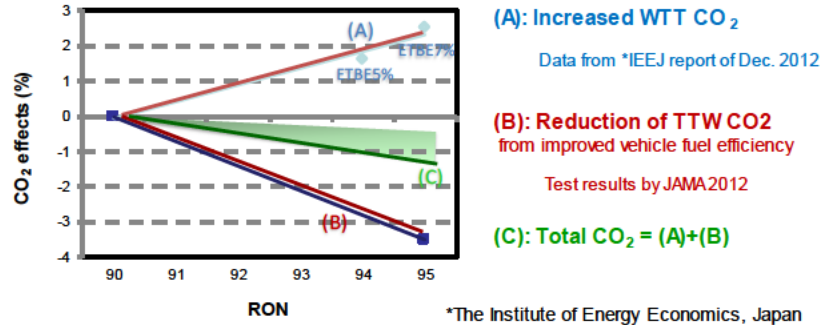
CLEAN AIR THROUGH CLEAN FUELS

Source: Asian Clean Fuels Association (ACFA)

Several countries have implemented or are considering regulations that promote the use of higher octane fuels. For instance, the European Union has introduced the Euro 6d emission standards, which encourage the use of high-octane gasoline to meet stringent emissions targets. Similarly, the United States has adopted the Tier 3 standards, which require automakers to produce vehicles that can achieve lower emissions by utilizing high-octane fuels.

- Higher octane fuels improve energy efficiency and engine performance

## Increased RON (90 to 95)



**When RON95 gasoline is used with a fuel efficiency gain of 3.5% than RON91, WTW CO<sub>2</sub> can be reduced by 1% ( 1.4 million CO<sub>2</sub>-t/yr)**

Source: The Institute of Energy Economics (IEEJ), Japan

Higher octane fuels, typically with Research Octane Numbers (RON) above 95, are known to enhance engine efficiency and performance. These fuels have better anti-knock properties, allowing engines to operate at higher compression ratios and extract more energy from each unit of fuel. This results in improved fuel economy and power output.

- Higher octane contributes to emissions reduction  
Higher octane fuels can contribute to reducing harmful emissions. With better combustion characteristics, engines running on higher octane fuels generate fewer pollutants like nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO), and particulate matter. This is particularly important for addressing air pollution and meeting stricter emission standards.
- Higher octane fuel contributes to energy security  
Increasing the octane rating of gasoline can future-proof the fuel supply as vehicle technologies evolves. Higher octane fuels are compatible with a wide range of advanced powertrain technologies, including hybrids, plug-in hybrids, and future combustion engine designs. By ensuring a higher octane fuel supply, countries can accommodate these emerging technologies without requiring significant changes to infrastructure or vehicle fleets.

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11. In this document, we have appended the facts and science of our recommendations, which we hope would serve as a useful tool for Australia’s policy-making considerations. Should you require further information, please feel free to send us your queries and we will be happy to address them. Thank you.

Yours sincerely,

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