Whitepaper

The Decline of Autogas in Australia

What happened and lessons learned for other vehicle and appliance industries

By 2010 Autogas, or LPG as a transport fuel, was the highest volume use of LPG in Australia. Despite this, Australian Autogas demand has dropped by over 80% between 2010 and 2022. conversely, overall LPG production in Australia remained stable over the same period, well above total demand, and non-transport use of LPG (e.g., heating, cooking, industrial use) grew modestly in line with population growth.

This has occurred while Autogas markets have grown and thrived globally, raising the question – why has Autogas use declined in Australia?

Australian Autogas industry participants have identified several factors suspected of influencing the collapse of this once-prominent lower-emission fuel:

- Lower Energy Density and Performance compared to traditional fuels
- Limited international market size & associated lower rates of innovation
- Removal of vehicle conversion subsidies and introduction of fuel excise on Autogas
- Vehicle Original Equipment Manufacturers (OEMs) voiding warranties upon conversion
- Collapse of car manufacturing in Australia

This paper considers the impact of each factor, drawing conclusions and lessons learned which may be applicable to other alternative fuel vehicle industries and industries facing pressure that may reduce domestic appliance supply.

Suspected Contributing Factors

1. Lower Energy Density and Performance

Autogas contains less energy per litre than petrol or diesel, typically reducing vehicle range and torque without substantial engine tuning or modification. While modern injection systems improved performance to proximity of traditional fuels, the consumer perception remained that LPG vehicles were underpowered.

For commercial fleets where reliability and range are crucial this performance gap became an impedance to wider adoption. Despite reduced performance, and as noted in point 3 below, the economic efficiency of Autogas remained superior where range or torque were not critical.

2. Limited international market size & lower rates of innovation

Autogas has historically lacked a significant global market outside of niche adoption in countries like South Korea, Turkey, and parts of Europe. With limited economies of scale, Australia relied heavily on domestic vehicle production.

While efficiency has improved, limited global innovation has left Autogas behind as global innovation effort was focused on traditional fuels and, eventually, electric vehicles.

Even where innovation did arise, Australia's bespoke vehicle regulation and right-hand-drive design makes importing from other jurisdictions a costly proposition for a relatively small market.

3. Subsidy removal and Fuel Excise introduction

Prior to 2010, the rise of Autogas was supported by government policy including a fuel excise exemption and Autogas conversion subsidies.

From 2011, a phased introduction of fuel excise on LPG increased its effective price per litre. At the same time, subsidies for installations were removed. Although Autogas remained cheaper than petrol and diesel on a per-kilometre basis (even with conversion costs included), the savings gap between Autogas and traditional fuels narrowed, reducing the fuel's economic incentive.

This policy shift undermined one of the strongest selling points of LPG vehicles. Despite this, the economic proposition of Autogas was and is still superior to many diesel and petrol vehicles.

4. OEMs voiding warranties upon conversion

Around the early 2010's, major vehicle OEMs began refusing to honour warranties for petrol vehicles converted to LPG, citing performance and compatibility concerns. This left consumers wary, especially as modern engines became more complex. Without manufacturer backing, both consumers and dealers grew reluctant to pursue or recommend LPG conversions, removing one of two pipelines of Autogas vehicle supply.

5. Collapse of Australian Car Manufacturing

Until the mid-2010s, vehicle OEMs Holden and Ford produced factory-fitted Autogas vehicles tailored to local Australian conditions. With the collapse of Australia's car manufacturing industry which was shuttered by 2017, the only remaining pipeline of LPG vehicle supply vanished.

Imported vehicles rarely came with LPG-ready variants. Without local vehicle component supply, Autogas conversion became costly, less standard, and increasingly rare. As noted above, the cost of compliance with Australia's bespoke vehicle regulation further impeded an Autogas vehicle import market arising to replace local supply.

Discussion and Conclusion

Australia's Autogas market decline is a complex issue. While each factor above likely contributed, two factors stand out as having greatest impact:

1. The End of Local Vehicle Manufacturing
   The end of vehicle manufacturing in Australia eliminated the country's primary source of LPG vehicle supply. This structural change removed the most direct pathway to vehicle supply. This factor, combined with regulation making vehicle imports economically challenging, led to a significant supply-side contraction in the Autogas vehicle market.

2. OEM Conversion Resistance and Voiding of Warranties
   Reluctance of vehicle OEMs to honour their warranties following Autogas conversion discouraged the aftermarket conversion market. This in turn eroded overall consumer confidence in Autogas, further diminishing demand for Autogas-compatible vehicles.

The combination of these two factors is perceived as having the greatest impact on the Australian Autogas market collapse.

In short – **comprehensive removal of Autogas vehicle supply into the Australian market has most likely caused the collapse of the Autogas market in Australia.**

The introduction of fuel excise, removal of subsidies, lack of innovation, performance limitations and damaged public perception of LPG vehicles all created a more challenging environment for Autogas to succeed.

However, these factors alone are considered insufficient to explain complete market collapse, particularly given that Autogas often remains economically superior to traditional fuels.

It follows that **the action required to reverse Autogas decline is to restore secure domestic or imported supply of Autogas vehicles.**

Lessons for Autogas and analogous markets

The Australian Autogas experience offers general insight into how markets can decline when supply of 'consumer appliances' (here, vehicles) required to participate in a market (here, Autogas) is removed. It can be concluded that avoiding consumer appliance market collapse is critical to maintaining demand in any fuel supply chain.

This lesson can be especially relevant where appliances are subject to bespoke regulation which can impede appliance imports. This applies to most Australian energy consumption sectors.

The Autogas example leads to strategies to avoid market collapse due to reduced appliance supply:

- Maintain a domestic manufacturing base for all appliances subject to bespoke regulation;
- Reform regulations to align with global markets to allow for appliance imports.

It is hoped that these lessons can help other industry stakeholders avoid the same challenges faced by the Australian Autogas market.