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Growing our own fuels

Australia consumes over 56 billion litres of liquid fossil fuels each year across 11 major sectors of the economy, including heavy vehicle road freight. This liquid fuel use accounted for nearly 150 MtCO₂ in 2022–23, approximately 32 percent of domestic greenhouse emissions. The heavy vehicle transport sector accounts for approximately 8.2 MtCO₂ of this.

As I have explored in some of my previous columns here, Low Carbon Liquid Fuels (LCLFs) have a large role to play in decarbonisation of liquid fuels in hard to abate sectors, many of which present in the truck space. Also, due to our old truck fleet that has an average age of 15 years (30 year total life) a mechanism is required to, at least, partially decarbonise existing vehicles, as a new diesel truck sold today may not retire from the Australian truck fleet until 2055.

In global markets, LCLF production is scaling up rapidly due to supportive climate and economic policies, with global supply reaching 33 billion litres as of 2024. Australia is already playing an important role in these overseas markets by exporting a range of feedstocks which are processed into low carbon fuels. Unfortunately we then import these processed LCLFs for use in trucks, aircraft, trains, mining and construction equipment, ships, etc, because the level of Australian bio-fuel production remains low, in the order of 10 million litres produced yearly. Despite the potential combined output of these local bio-diesel refineries being approximately 105 million litres annually.

Momentum for a new generation of Australian manufactured LCLFs is growing, with 12 advanced LCLF projects in various stages of development across the country. This was highlighted in a recent report published by the Clean Energy Finance Corporation (CEFC), that was developed by Deloitte.

The CEFC report details that the pace of electrification is increasing markedly as battery prices continue to fall and new models enter the passenger, light commercial, and some truck segments. However, a significant share of Australia's liquid fuel demand is hard-to-electrify, meaning net zero targets could be at risk without other decarbonisation options. The development of an Australian LCLF industry can deliver the decarbonisation of Australia's hard-to-electrify sectors. Also acknowledged in the report is that our economy is

characterised by significant reliance on long-distance transport and remote operations and that Australia is heavily reliant on imported liquid fuels, with little local petrol and diesel fuel production. The report reflects on a 14-year trend that has seen domestic refining capacity decline from 75 percent of national consumption to just 20 percent in 2024, across all transport liquid fuels. Further, even if electrification trends continue, hard to-abate sectors will remain exposed to this fuel security threat.

The report details how production of LCLFs can boost Australia's economic prosperity, with benefits flowing directly to regional communities. An LCLF industry can also deliver a significant economic benefit to Australian farmers and fuel producers. The Australian agriculture sector has a competitive advantage with our abundant feedstock resources to supply the global LCLF market. Australian tallow and canola are major feedstocks for LCLF production. These feedstocks are currently exported to Europe and Asia where they are transformed into LCLFs for use in those markets. The reports analysis shows that most of the \$15 billion domestic feedstock opportunity required by 2050 to underpin domestic refiners will be supplied by Australia's agricultural sector. This would support a total domestic LCLF market valued at more than \$36 billion in today's dollars. With feedstock comprising up to 70 per cent of LCLF production costs, this represents a significant economic opportunity for Australia's agricultural sector to diversify income streams for farmers and regional communities. In the future, Australia can leverage this comparative advantage in feedstocks and LCLF production to play a greater role in global trade, at great benefit to regional communities. Furthermore, the development of sovereign production capacity offers a pathway for onshoring greater value-added production.

The Truck Industry Council has been championing LCLFs as one of the solutions that is critical for decarbonising Australia's heavy vehicle fleet for some time now. Along with the electrification of urban road freight and the use of higher productivity vehicle combinations, collectively these technologies will form the major pathways to decarbonisation of road freight in our country. Growing our own fuels simply makes sense. What we now require is clear policy direction from government to enable the growth in our current fledgling local Low Carbon Liquid Fuel industry in Australia to best deliver cost effective low carbon fuels.

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