



From feedstocks to fuel security: building Australia's biofuels future

Biofuels update

August 2026

Summary

- Biofuels and low-carbon liquid fuels (LCLFs) have increasingly grown in discussion since early 2026, as geopolitical disruption, including the conflict in the Middle East, has affected around 20 per cent of global oil and gas flows through key shipping routes and pushed crude prices more than 30 per cent higher since February.
- Australia continues to export large volumes of feedstocks – including around six million tonnes of canola annually – while importing more than 30 billion litres of diesel, highlighting a persistent imbalance between upstream production and downstream fuel refining.
- Liquid fuels still account for more than half of Australia’s final energy demand, particularly across aviation, mining and long-haul freight, where dependence on diesel and jet fuel remains high despite progress in electrification.¹
- At the same time, Australia’s fuel stockholdings remain relatively limited, with industry stocks equivalent to roughly 30–37 days of consumption across diesel, jet fuel and petrol in early 2026, reinforcing the importance of supply diversification.
- Progress is continuing toward establishing a domestic biofuel and LCLF industry in Australia, although the sector remains at an early stage of development.

This ‘biofuels update’ accompanies ANZ’s [From Feedstocks to Fuels: Australia’s Evolving Biofuels Sector](#) ‘biofuels paper’ from March 2026.

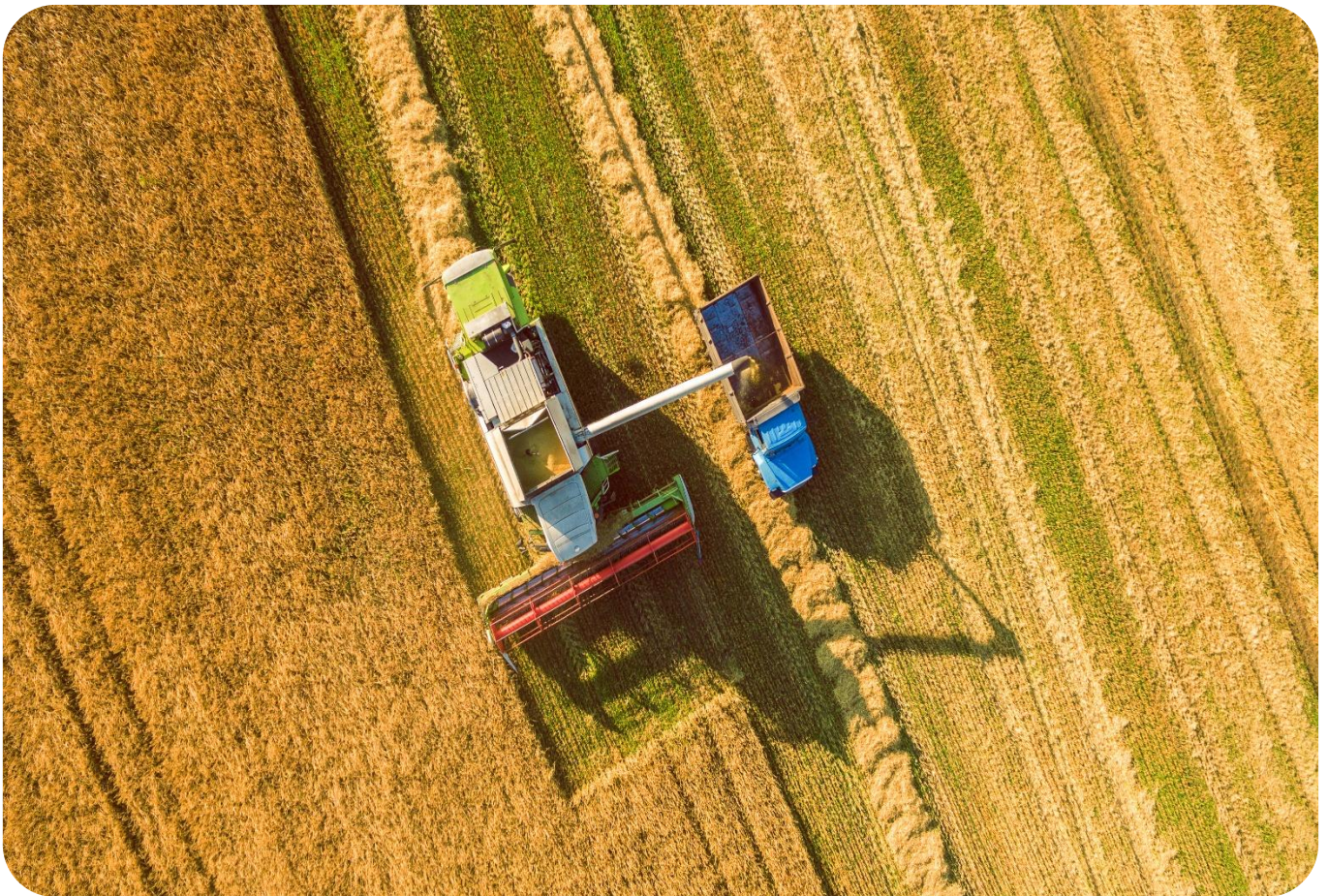
¹ Commonwealth Scientific and Industrial Research Organisation (CSIRO) 2026, [Energy resilience: Australia’s alternative fuel opportunities](#).



Introduction

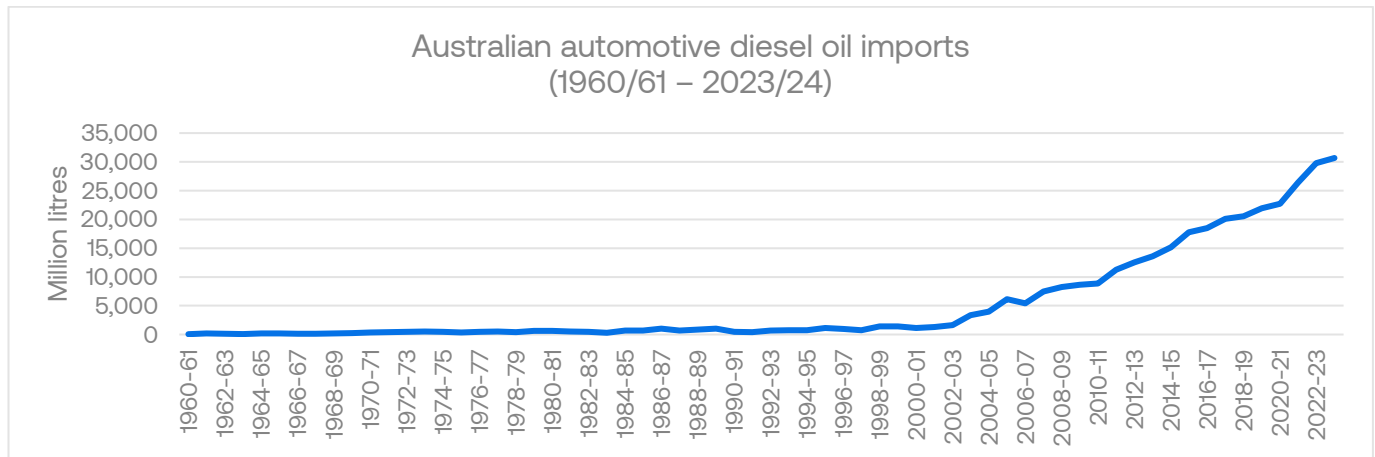
While the role of biofuels had been building in policy and industry discussions over recent years, developments in 2026 have brought the issue more firmly into the mainstream. In early 2026, the interaction between fuel security, agricultural markets and the role of electrification was already becoming more prominent, but recent geopolitical disruption has made those dynamics more visible and more immediate. In particular, the conflict and ongoing uncertainty in the Middle East has contributed to higher oil prices and increased volatility in refined fuel markets, placing renewed pressure on countries that rely heavily on imported fuel. While this paper focuses primarily on biofuels, many of the themes discussed also apply to the broader category of LCLFs, including emerging synthetic fuel pathways.

In practice, these developments have heightened attention on Australia's longstanding dependence on imported liquid fuels and the challenge of reducing fuel use in sectors such as aviation, freight, mining and agriculture. These conditions reinforce the role of biofuels as one of several practical responses to a system facing both decarbonisation pressures and supply risks. Their relevance lies in their ability to integrate with existing fuel infrastructure (both refining and "drop in" use) while also intersecting with Australia's agricultural base and regional industries.



Fuel security and recent developments

Fuel security has re-emerged as a central driver of the discussion around biofuels in 2026. The escalation of conflict involving Iran has disrupted flows through the Strait of Hormuz, one of the world's most important energy chokepoints, through which around one-quarter of global seaborne oil trade and close to one-fifth of global LNG trade normally passes. For import-dependent economies such as Australia, this has reinforced how quickly external shocks can flow through to domestic fuel markets, particularly for diesel and aviation fuel.



Source: Department of Climate Change, Energy, the Environment and Water (DCCEEW 2025, [Australian Energy Update 2025](#); ANZ.

Australia's reliance on imported diesel has shifted from marginal in earlier decades to structural today, with imports rising sharply since the mid-2000s to exceed 30 billion litres annually. This reflects declining domestic refining capacity and growing dependence on global fuel supply chains.

Australia's policy response has focused on strengthening resilience within the existing fuel system, including measures to increase reserves and improve supply security. The renewed focus on fuel security has also intensified scrutiny of Australia's dependence on imported diesel. Australia imports around 87 per cent of its diesel requirements and is one of the most diesel-intensive economies in the world on a GDP basis, reflecting the importance of freight, mining and agriculture to the national economy.

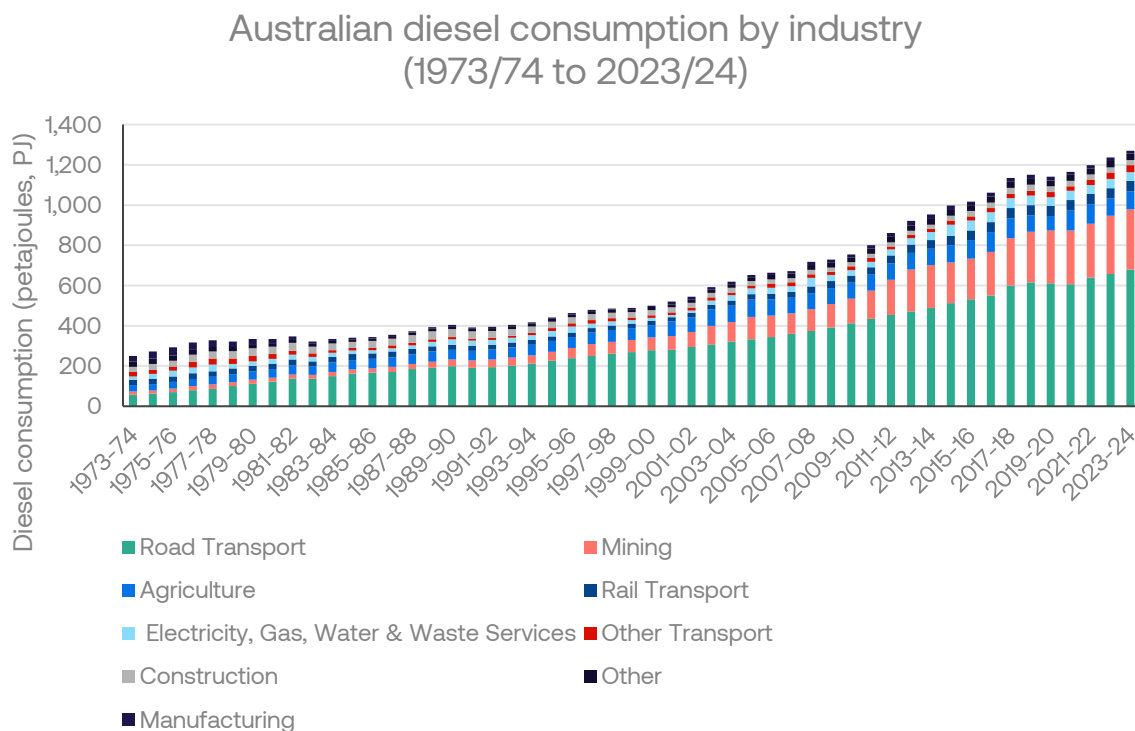
Within this context, biofuels are increasingly being considered as a way to broaden supply options. Renewable diesel, biodiesel and sustainable aviation fuel (SAF) can be used within existing engines and distribution networks as drop-in fuels, meaning they can supplement conventional fuels without requiring wholesale changes to infrastructure. Their potential value lies in diversifying supply, reducing marginal dependence on imported fuels and providing a pathway to decarbonisation for hard-to-abate sectors. Demand is also being supported by a growing range of policy measures, blending mandates, corporate scope 3 emissions reduction targets and aviation sector decarbonisation commitments, which are increasing interest in low-carbon liquid fuels across both governments and industry.



Electrification and where biofuels fit

The renewed focus on biofuels also reflects the uneven progress of electrification across the energy system. Passenger vehicles and urban fleets are transitioning more rapidly, supported by improving battery technology and charging infrastructure, but heavier industries face more persistent constraints.

Sectors such as aviation, long-haul freight, mining and large-scale agriculture require high energy density, long operating cycles and rapid refuelling, often in remote or mobile environments. These characteristics make full electrification difficult in the near to medium term. Aviation provides the clearest example, with SAF able to reduce emissions by around 50 - 80 per cent compared with conventional jet fuel when measured across its lifecycle, but still representing less than 1 per cent of global aviation fuel supply.



Source: ANZ data; Department of Climate Change, Energy, the Environment and Water (DCCEEW 2025, [Australian Energy Update 2025](#)).
Note: 1 PJ $\approx$ 25–30 million litres of diesel-equivalent (by energy content).

Australia's diesel consumption has more than quadrupled since the 1970s, with road transport and mining now dominating demand and driving overall growth. This scale of use explains why biofuels policy focuses on whether domestic low-carbon fuels can realistically displace diesel in freight, resources and agriculture rather than delivering marginal gains in lower fuel-use sectors.



These constraints mean that liquid fuels are likely to remain central to these sectors in the short- to medium-term, even as electrification expands elsewhere. Over time, this is likely to increase the relative importance of hard-to-electrify sectors within overall fuel demand, as easier applications transition first. Deloitte estimates that by 2050, aviation, mining and long-haul freight could account for around 80 per cent of Australia's liquid fuel demand, almost double their share today.² This suggests that even as electrification progresses, the future fuel challenge will become increasingly concentrated in sectors where liquid fuels remain difficult to replace.

In this setting, biofuels are complementary to electrification, rather than in competition with it. They provide a lower-emissions pathway for sectors where liquid fuels remain essential, while allowing existing equipment and infrastructure to continue operating. Recent industry trials reinforce this approach, including marine fuel applications using blends of tallow-derived biodiesel and used cooking oil, which have demonstrated emissions reductions of up to around 70-80 per cent on a lifecycle basis in controlled studies.³

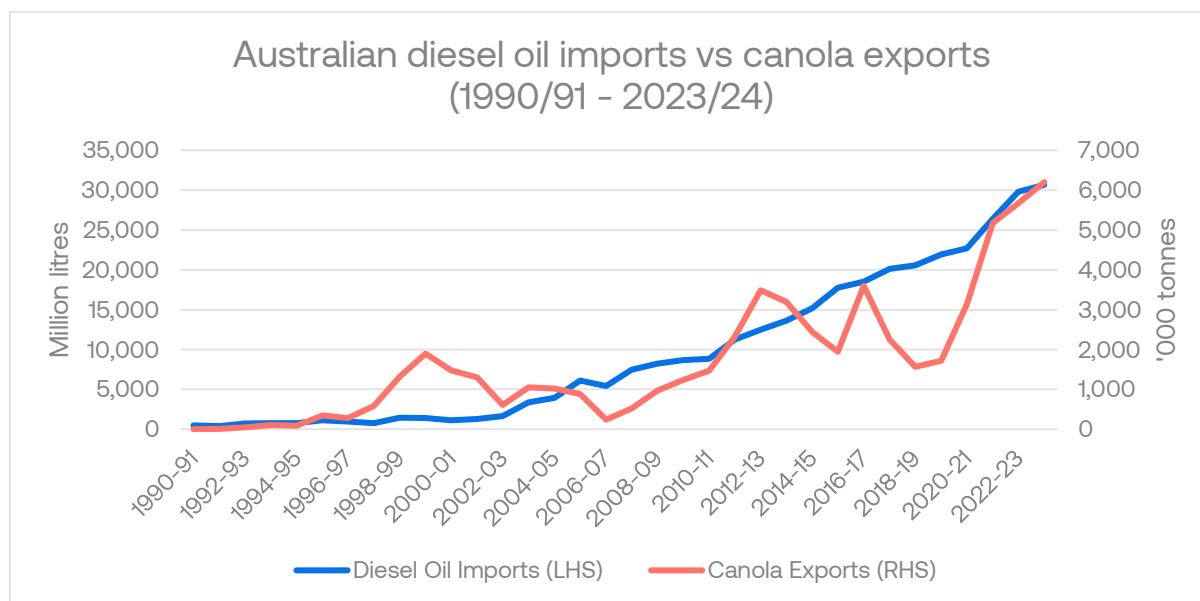


² Bioenergy Australia and Deloitte 2025, [Securing our fuel future: resilience through low carbon liquid fuels](#).

³ Hydrocarbon Processing 2026, [HAMR Energy contributes to project introducing tallow-based biofuel to expand maritime low-emissions fuel supply](#).

Feedstocks, farmers and domestic value-adding

While Australia's feedstock base remains one of its strongest advantages for biofuels, it also highlights a structural gap in domestic value-adding. Australia exports around six million tonnes of canola each year, much of it processed offshore into renewable diesel and biodiesel, while importing more than 30 billion litres of diesel to meet domestic demand. This contrast illustrates the scale of the opportunity to capture more value within Australia if refining capacity can be developed locally.



Source: ANZ data; Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) data; Department of Climate Change, Energy, the Environment and Water (DCCEEW 2025, [Australian Energy Update 2025](#)).

Australia exports large volumes of biofuel feedstocks while importing substantial quantities of diesel, highlighting a structural imbalance between upstream production and downstream fuel supply. This contrast underscores the potential to capture more value domestically if feedstocks are increasingly linked to local fuel production.



Regional examples show how this dynamic is beginning to evolve. In Western Australia's Esperance region, around one million tonnes of canola are produced annually, with approximately 90 per cent exported to international biofuel markets. At the same time, emerging projects in the region, including early-stage renewable diesel facilities, are targeting production in the order of tens of millions of litres per year, with longer-term expansion plans extending into the hundreds of millions of litres. While still modest relative to national demand, these projects demonstrate how local feedstocks could increasingly be linked to domestic refining over time.

Beyond canola, other feedstocks add depth to the opportunity. Tallow and used cooking oil are becoming increasingly valuable as demand for waste-based fuels rises globally, while sugarcane remains the primary feedstock for Australia's ethanol production, particularly in Queensland, supported by established blending mandates and mill-based processing. In addition, crop residues such as wheat straw and stubble, and forestry residues from logging operations are attracting increasing attention as potential feedstocks. Newer pathways including municipal waste streams and algae-based fuels are being explored as inputs for next-generation fuels. While waste oils and tallow currently dominate SAF production, they are unlikely to meet projected long-term demand on their own. Industry forecasts suggest global SAF demand could exceed supply by more than 20 million tonnes by 2035, increasing the importance of alternative feedstocks and technologies such as alcohol-to-jet, Fischer-Tropsch and power-to-liquid (e-SAF) pathways.⁴

For farmers, these developments are coinciding with greater volatility in input markets. Fertiliser prices, particularly for urea, which accounts for almost half of Australian fertiliser use, have been influenced by global supply disruptions, alongside higher and more volatile diesel costs. In this context, biofuels can provide an additional demand source for agricultural outputs and by-products, supporting more diversified revenue streams and potentially improving resilience to input-cost pressures over time.



⁴ S&P Global 2025, [Global SAF supply to fall 23 million mt short of demand by 2035: SkyNRG](#); SkyNRG 2025, [SkyNRG & ICF release Sustainable Aviation Fuel Market Outlook 2025](#).

Global momentum and implications for Australia

International developments continue to shape biofuel markets as countries respond to both energy security requirements and emissions reduction targets. In Asia, several governments have accelerated blending mandates, including Indonesia's move toward higher biodiesel blends and India's continued rollout of higher ethanol blending. These policies are designed to reduce reliance on imported oil while supporting domestic agricultural sectors, demonstrating how biofuels are increasingly positioned at the intersection of energy security and farm economics.

At the same time, global biofuel demand is reshaping feedstock markets. In the United States, around 40 per cent of corn production is now used for ethanol⁵, illustrating how large-scale integration between agriculture and fuel production can develop under supportive policy settings. As renewable diesel and SAF capacity expand globally, competition for feedstocks such as used cooking oil, tallow and vegetable oils is increasing, which supports export prices but can also raise input costs for domestic processing. This dynamic is particularly relevant for projects relying on hydroprocessed esters and fatty acid (HEFA) feedstocks such as tallow and used cooking oil.

However, many proposed Australian pathways extend beyond traditional HEFA feedstocks, incorporating canola, crop residues, forestry residues and municipal waste streams. Industry interest is also expanding toward technologies such as alcohol-to-jet, Fischer-Tropsch conversion of biomass residues and e-SAF pathways, reflecting the need for a broader feedstock base as demand grows.

For Australia, these trends create both opportunity and constraint. Strong global demand supports export returns for feedstocks, but it can also make it more difficult for local projects to secure feedstock at competitive prices. This tension will be central to how the domestic industry develops, particularly in the absence of strong demand-side policy signals (such as mandates). However, policy settings continue to evolve. As part of the Federal Government's [Strengthening Australia's Fuel Resilience package](#), the Government has flagged the introduction of a demand measure for LCLFs, with consultation underway at the time of writing. Such measures could play an important role in shaping future investment decisions and domestic industry development.

⁵ U.S. Department of Agriculture (USDA) 2025, [Feed Grains Database and World Agricultural Supply and Demand Estimates \(WASDE\)](#); ethanol production accounted for approximately 40% of U.S. corn utilisation.



Conclusion

The developments of 2026 have made the biofuels discussion more immediate. The Middle East conflict has highlighted the vulnerability of global fuel supply chains, while Australia's reliance on imported refined fuels remains a structural exposure. At the same time, sectors such as aviation, freight, mining and agriculture continue to require liquid fuels at scale, even as electrification progresses elsewhere.

Biofuels sit within this intersection of fuel security, agricultural opportunity and energy transition. They are unlikely to displace fossil fuels entirely in the near term, but they are increasingly part of the practical response to both supply risk and emissions constraints. The central question for Australia is therefore not whether biofuels matter, but how the country chooses to participate, and how much of the associated economic and strategic value it seeks to capture domestically, both in the short- to -medium and the long-term.



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