Submission by

Toyota Motor Corporation Australia

to

Cleaner Fuels Program: Powering low carbon liquid fuel production in Australia

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Executive Summary

Toyota welcomes the opportunity to contribute to the Cleaner Fuels Program consultation and strongly supports policies that accelerate domestic LCLF production. As Australia's leading automotive brand, Toyota brings decades of experience in low-emission technologies and is committed to a multi-pathway approach that complements electrification, strengthens fuel security, and delivers credible near-term abatement for hard-to-electrify applications.

Key points

- **Toyota's Multi-Pathway Strategy**

  Combining electrification, hybrid technology, hydrogen and low-carbon liquid fuels ensures practical solutions for passenger and light commercial vehicles, preserving consumer choice and accelerating emissions reduction.

- **Role of LCLF for Automotive**

  Renewable diesel should be prioritised for light commercial fleets and regional transport where electrification is challenging. These drop-in fuels maintain reliability and reduce well-to-wheel (WtW) emissions significantly. Ethanol blends paired with hybrid provide an affordable, scalable pathway for light vehicles without major infrastructure changes.

- **Domestic Supply Chain Development**

  Investing in regional hubs and multipathway infrastructure will ensure nationwide availability of ethanol blends and renewable diesel, supporting automotive customers and dealer networks.

- **Demand-Side Measures**

  Blending mandates and government-backed offtake agreements are essential to create market certainty for automotive fuels and encourage fleet adoption.

- **International Benchmarking**

  Leading jurisdictions such as California, the EU, and Brazil have successfully combined production incentives with demand-side measures, lifecycle-based standards, and blending mandates. Australia can learn from these models to accelerate LCLF adoption and ensure competitiveness in global markets.

About Toyota Australia

Facts and Statistics	▪ Presence in Australia since 1959 ▪ 22 consecutive years as Australia's best-selling automotive brand with 241,296 vehicles delivered in 2024. Additionally, Lexus Australia sold 13,642 vehicles in 2024 ▪ Toyota Australia directly employs 1,500+ staff ▪ Dealer network of approximately 280 Dealers with their own workforce of approximately 15,000 employees ▪ 200+ EV chargers across Toyota Dealers, including 16 that are publicly available. Toyota Australia has over 25 EV charging points across our corporate properties. ▪ While no longer a local manufacturer, Toyota Australia continues to deliver diverse operations above and beyond import/distribution as is evident through our Altona Centre of Excellence (COE). COE functions include. – Product Planning & Development, Conversions and Accessories – Design, develop or customise vehicles to meet the needs of the Australian market – Product knowledge centre – Carry out vehicle evaluation on a 1.2km test track purpose built to replicate Australian road conditions – Hydrogen Centre – Victoria's first integrated hydrogen site including a hydrogen generation and refuelling station – Local assembly of Hydrogen Power Generators intended for both Australian and export markets. – Corporate Social Responsibility (CSR) initiatives - Sharing Toyota Production System knowledge with local industry through our Toyota Production System Support Centre (TSSC) and broader community support through Toyota Community Trust contributions (1% of pre-tax profit to community with a value between $2.5-$3.5 million per year). – Sponsorships and grass-roots community contributions such as the AFL 'Good for Footy' program, Cricket Australia, Olympics and Tamworth Country Music Festival

Product Information	▪ Market leader in hybrid technology – Introduced the first mass produced hybrid vehicle to the Australian market (Toyota Prius) in 2001 ▪ Pioneer in hydrogen fuel cell vehicle (FCEV) technology ▪ Toyota and Lexus hybrid and other zero and low emissions vehicle product range: – Toyota o Hybrids • C-HR • Camry • Corolla Cross • Corolla Sedan and Hatch • Kluger • RAV4 • Yaris • Yaris Cross o Plug in Hybrids • RAV4 (2026) o Battery Electric Vehicle • bZ4X • Hilux (2026) o Hydrogen Fuel Cell Electric Vehicle • Mirai[2] • FC Hilux (2028) – Lexus o Hybrids • LBX SUV • UX SUV • NX SUV • RX SUV • ES sedan • LS sedan • LC coupe • LM people mover o Plug-in Hybrids • NX SUV • RX SUV o Battery Electric Vehicle • UX SUV • RZ SUV Toyota launched its first hybrid in Australia in October 2001 with the original Prius, and has now sold more than 430,000 hybrid vehicles since then.

Response

1. Eligible Fuels

1.1 Which LCLF should be eligible under the program and why?

Renewable Diesel (RD), Sustainable Aviation Fuel (SAF) and Ethanol should all be eligible because they deliver substantial lifecycle emissions reductions (~80–90%) and can be deployed quickly without major infrastructure changes.

- RD (HVO) is a true drop-in fuel for heavy-duty and light commercial vehicles, critical for hard-to-electrify sectors.
- SAF addresses aviation decarbonisation and shares production processes with RD, enabling cost efficiencies through harmonised production.
- Ethanol blends, supported by existing E10 infrastructure, offer an affordable pathway for passenger and light commercial vehicles. Wider adoption requires mandates and incentives similar to Brazil's approach.

Some vehicles and use cases pose significant challenges to electrify, and Australians should be free to choose the right option while reducing emissions. The Climate Change Authority suggests 50% battery electric vehicle (BEV) sales over the next decade, yet BEVs currently make up just 8.2% of new sales, well below the pace needed for climate targets. Millions of existing vehicles fall outside current policies (such as the NVES), and switching them to low-carbon fuels offers immediate emissions cuts without replacing vehicles or infrastructure.

Renewable diesel and sustainable aviation fuel (SAF) should both be prioritised to maximise emissions reductions across hard-to-abate sectors. Renewable diesel is critical for light commercial transport, heavy vehicles, and mining (areas that account for most liquid fuel use) while SAF remains essential for aviation. Treating one as a higher priority risks overlooking significant abatement potential in the other and their production can be complementary. Ethanol blends should also be supported to accelerate passenger vehicle decarbonisation. While fuel-agnostic mechanisms provide flexibility, clear prioritisation of these key fuels will not only deliver the greatest impact but also provide certainty for investment in domestic production capacity.

Should certain types of LCLF be prioritized over others?

1.1.1 Should LCLF suitable for particular sectors or uses be prioritized? For example, should sustainable aviation fuel be prioritized over renewable diesel?

1.1.2 Should LCLF for certain sectors or uses be de-prioritised due to other viable decarbonization pathways?

1.1.3 What market impacts are anticipated by influencing prioritisastion of particular fuel types?

1.1.4 Are there any potential benefits, risks or constraints considering the two different production credit options?

1.1.5 What outcomes do you think can be delivered with the available funding?

Prioritisation and Market Impacts

LCLFs should be prioritised based on their ability to deliver immediate, scalable emissions reductions across multiple applications. Harmonising RD and SAF production reduces costs and improves efficiency, as RD is less complex to produce and shared processes allow flexible production ratios. Of Australia's 60 billion litres of annual fuel consumption, more than half is diesel, underscoring RD's critical role in decarbonisation.

Economic Rationale for RD and Ethanol

RD and ethanol enable decarbonisation without major infrastructure changes or vehicle replacement. RD supports freight and high-load uses, while ethanol blends, especially with hybrids, offer an affordable pathway for light vehicles. Both can be produced locally from feedstocks such as canola, sugar cane, tallow and waste oils, creating regional jobs and economic opportunities. These fuels can scale quickly, unlocking projects already in development and positioning Australia competitively in Asia-Pacific markets.

Why Biodiesel (FAME) Should Not Be Prioritised

Biodiesel (FAME-based) is not a true drop-in fuel and can damage modern engines at higher blends, limiting practicality without costly modifications. It also relies heavily on food-grade crops, creating competition with food and fibre markets and raising sustainability concerns. In contrast, 1st generation RD (HVO) can be produced from canola, a crop Australia excels in as the fourth-largest global producers, making them more viable locally. Furthermore, 2nd generation HVO, SAF, and ethanol use non-food feedstocks. This reduces environmental risk and supports a circular economy.

2. Type of production support

2.1. Should the production credit be a fixed amount per litre of production, or a variable amount that depends on the market price of LCLF?

a. Are there any potential benefits, risks or constraints considering the two different production credit options?

b. What outcomes do you think can be delivered with the available funding?

c. What type of mechanism provides the greatest investment certainty or level of bankability to projects?

d. How can this support be structured to prevent substantial upside to producers?

e. How do you consider pricing for LCLF will be set over the short-medium term and longer term? Will pricing be matched to a premium on equivalent fossil fuel or price of imported LCLF or be on a carbon abatement basis?

Toyota notes the government's preference for production-linked incentives and supports mechanisms that provide investment certainty and reward well-to-wheel (WtW) carbon reductions.

2.2. To deliver the policy intent of the Program while maximising the value for taxpayers, do you agree that projects with the lowest cost should be prioritised under the Program, with the cost being measured either as per unit of LCLF produced or as per unit of carbon emissions abated?

Lowest cost does not always deliver the best outcomes, either in the short or long term. The Program should prioritise projects that establish the foundations for a strong, sustainable LCLF industry in Australia, rather than those that simply look good on paper today. Early-stage production will rely on carbon-intensive assets while infrastructure and technology mature, so decisions should focus on long-term emissions reduction and industry capability. This means supporting projects that build scalable supply chains, enable domestic feedstock retention and create pathways for future cost reductions, positioning Australia as a global LCLF leader rather than chasing short-term metrics.

2.3. Should the production credit be linked to the quantum of LCLF produced, or the carbon emissions saving potential of the fuel?

Toyota advocates for a policy framework where fuel production is incentivized to guarantee reliable access for RD customers. This approach ensures that as demand for RD grows, supply remains consistent and scalable. In the interest of simplicity and getting the production of the ground, we recommend beginning with a volume-based production credit

A strong example of this principle can be seen in Brazil's volume-based policy, which gradually increases renewable fuel integration over time. Brazil implemented a progressive blend mandate, starting with low blending levels and incrementally raising them. This gradual approach provides market stability, encourages investment in production capacity, and supports long-term adoption without disrupting existing supply chains.

Toyota believes that similar policies which combine production incentives with phased blending requirements are essential to secure RD availability and accelerate the transition toward cleaner fuels.

2.4. What are your views on the cost to deploy LCLF domestically compared to internationally? Is there a local premium for domestic production?

Yes, there will be a local premium for domestic production in the early stages. International markets are more advanced, and Australia's limited refining capacity means initial costs will be higher. However, as the industry scales and technology matures, costs will fall significantly. Australia also has a major advantage in feedstock availability (such as canola, tallow and waste oils) which can drive long-term cost efficiencies and reduce reliance on imports. Building local capability now will strengthen fuel security and position Australia as a competitive producer in the region. Domestic production will also contribute to reducing Australia's reliance on current mineral export.

2.5. Should the total value of production credits be capped for each project? If yes, what should the capped amount be and why?

Capping production credits could limit the scale of investment needed to reduce Australia's

reliance on fossil fuels. Given the size of the challenge, removing or restricting incentives would act as a barrier rather than an enabler. Instead of rigid caps, the Program should focus on safeguards such as linking credits to verified carbon intensity reductions to prevent excessive upside. This approach ensures taxpayer value while allowing projects to scale and deliver the long-term fuel security and emissions reductions Australia needs.

2.6. Should production be focused on domestic supply only or should export also be permitted? What impact could restriction have for projects or the market?

Production should prioritise domestic supply to strengthen fuel security and reduce reliance on imports, but export should also be permitted to support industry scale and competitiveness. Restricting exports entirely could limit investment and discourage large-scale projects, as producers need access to broader markets to achieve economies of scale. Australia can learn from the gas market experience: Western Australia's mandatory domestic gas reservation has helped maintain supply and price stability, while the eastern states, without such a policy, face higher prices and import reliance. A balanced approach for LCLF ensures domestic needs are met first while enabling export opportunities that attract capital, create regional jobs and position Australia as a leader in low-carbon fuels across Asia-Pacific.

2.7. Is there a role for combined production support with capital grants for first-of-a-kind facilities?

No comment

2.8. What other types of funding or concessional finance could support LCLF projects (e.g. funding from CEFC and NRF)?

Toyota supports production credits that deliver immediate investment certainty and mobilise emissions reductions. We note Australia's existing $11 billion annual diesel tax subsidy largely benefiting heavy industries and could be refocused to accelerate RD production rather than perpetuating fossil diesel use.

By reallocating even part of this subsidy, Australia can:

- Signal a clear policy shift, making RD economically viable and reducing downstream emissions.
- Drive investment in domestic low-carbon fuel supply chains and infrastructure.
- Align spending with climate goals

2.9. Is any other support required across the supply chain to enable domestic production of LCLF?

Yes, demand-side measures are critical. Production alone will not create a viable industry without clear market signals. Blending mandates and incentives for fleet adoption will provide certainty for producers and encourage investment. These mechanisms ensure that supply and

demand grow together, reducing the risk of stranded assets and accelerating decarbonisation.

2.10. What lessons can Australia learn from other jurisdictions that have already implemented LCLF production support measures?

- California's Low Carbon Fuel Standard (LCFS)
  LCFS uses WtW emissions accounting to reward fuels that deliver genuine carbon reductions. It considers production, transportation, and use, ensuring a holistic emissions outcome. LCFS has successfully driven investment in low-carbon fuels and infrastructure while maintaining flexibility across technologies. Adopting a similar framework would align with Australia's climate goals and provide a robust foundation for hard-to-abate sectors.
- Brazil's Ethanol and Biofuel Strategy
  Brazil demonstrates the power of mandated blending and integrated incentives. Its RenovaBio program combines carbon credit schemes with progressive blending mandates—currently 30% ethanol in gasoline and biodiesel targets moving from B2 in 2008 to B15 today, aiming for B20 by 2030. This approach has created a stable market, supported over 8,000 service stations, and delivered up to 90% CO_2 reduction compared to gasoline on a WtW basis. Brazil also pairs fuel policy with vehicle incentives (tax reductions for FFVs and hybrids) and consumer benefits (including ethanol's increased fuel efficiency and lower price compared to petrol). This integrated approach drives adoption across both supply and demand. The result: 35 billion litres of ethanol annually, $40 billion in revenue, and over one million jobs.
- Key takeaway for Australia: Combine WtW standards with blending mandates, carbon credit incentives, and consumer measures to accelerate LCLF adoption. Leveraging existing E10 infrastructure and introducing stronger blending requirements, similar to Brazil, will unlock immediate emissions reductions and economic benefits.

3. Fuel production

3.1. Considering this objective, what production pathways should be focused on or prioritised?

a. Should priority be given to projects that use more-established production pathways (e.g. HEFA and HVO) than nascent production pathways that may present a higher level of technology risk?

b. How can nascent production pathways compete with more-established production pathways (e.g. HEFA and HVO)?

c. What minimum stage of project development (and evidence) should be expected by projects under the program?

3.2. Should there be a minimum facility size to be eligible?

3.3. Should LCLF be required to meet a carbon intensity threshold (% carbon intensity reduction compared to fossil equivalent) to be eligible for the program? If yes, what would be a reasonable threshold, and how should that threshold be calculated and verified? If not, why not?

a. If the production incentive is based on carbon emissions reduced, rather than volume of LCLF produced (see 2.3), is a minimum carbon intensity threshold still needed as part of the eligibility criteria?

b. Should Indirect Land Use Change be included in the method for determining carbon intensity, for the purpose of the Program?

c. Should any feedstocks be prioritised or otherwise considered out of scope?

3.4. Other than carbon intensity, should any other sustainability criteria be included?

3.5. Which international and domestic sustainability schemes should be allowed to verify sustainability claims?

Toyota supports prioritising production pathways that deliver proven WtW emissions reductions and can scale quickly to decarbonise hard-to-electrify sectors and existing ICE fleets. Established technologies such as HEFA and HVO offer lower risk and immediate impact, while emerging pathways should be encouraged through targeted innovation programs to ensure long-term diversity. Eligibility should focus on WtW carbon intensity and sustainability, harmonised with international standards, rather than prescriptive facility size or technology mandates. This balanced approach enables rapid emissions reduction today while facilitating innovation for future solutions.

4. Other policy considerations

4.1. What are your views on the aforementioned factors affecting the merit of a proposal?

Toyota supports merit criteria that prioritise projects delivering the greatest WtW emissions reductions, fuel security benefits, and regional economic opportunities. Proposals should demonstrate scalability, compatibility with existing automotive fleets, and alignment with international standards to ensure rapid deployment and long-term sustainability.

4.2. Recipients under the Program will need to deliver benefits according to the Community Benefit Principles under the Future Made in Australia Act (see Appendix D). How do you consider the Community Benefit Principles in relation to LCLF projects? Are there specific Community Benefit Principles that are more or less relevant?

Delivering regional jobs, strengthening supply chains, and supporting First Nations participation aligns directly with the Community Benefit Principles under the Future Made in Australia Act.

Toyota considers all Community Benefit Principles relevant, particularly those focused on creating regional jobs, strengthening local supply chains, and supporting First Nations participation. LCLF projects can deliver significant benefits by leveraging domestic feedstocks, building regional hubs, and fostering skills development in emerging clean energy sectors. Delivering regional jobs, strengthening supply chains, and supporting First Nations participation aligns directly with the Community Benefit Principles under the Future Made in Australia Act.

4.3. How will overseas policy developments interact with domestic policy settings to support projects reaching final investment decisions? For example, LCLF demand-side targets or mandates, and international frameworks such as the International Civil Aviation Organisation long-term global aspirational goal for international aviation (LTAG) of net-zero carbon emissions by 2050.

Australia can learn from global best practice that combines lifecycle-based standards with demand-side incentives.

- **California's LCFS** rewards fuels based on WtW carbon intensity, driving investment in low-carbon fuels while maintaining technology neutrality.
- **EU Renewable Energy Directive (RED II)** goes further by crediting the actual use of renewable fuels in vehicles toward transport energy targets. Advanced biofuels from waste or non-food feedstocks receive double credits, creating strong demand-side signals and accelerating adoption. The RED II credits the actual use of renewable fuels in vehicles toward transport energy targets, creating strong demand-side signals. Australia should consider similar mechanisms to complement production incentives.
- **Brazil's Ethanol Mandates** demonstrate how blending requirements, consumer incentives, and carbon credit schemes can scale renewable fuel use rapidly.

Key takeaway for Australia: Pair production incentives with mechanisms that recognise WtW emissions savings and credit fuel use in vehicles. This approach would align domestic policy with international norms, attract investment, and ensure LCLFs complement electrification in hard-to-abate sectors.

4.4. In addition to production support, what other measures are considered critical to achieve final investment decisions for projects? What are their key features?

Demand-side mechanisms are critical to complement production support. Blending mandates, government-backed offtake agreements, and harmonised fuel standards (e.g., EN15940) will provide market certainty and reduce risk of stranded assets. Policies that recognise LCLF-compatible vehicles (such as under a low carbon fuel standard) would incentivise OEMs to continue supplying these options. Equally, formal recognition within the NVES framework is critical to maintain technology diversity and ensure vehicles meet customer needs. Without this, NVES risks restricting choice and overlooking practical requirements for regional and heavy-duty applications.

4.5. What are the intersecting policies you expect need to be considered to unlock a domestic LCLF production industry?

Safeguard Mechanism, NVES, and Guarantee of Origin expansion should integrate with LCLF policy to create a coherent framework. This ensures supply-side incentives are matched with demand-side signals, enabling balanced growth of the domestic LCLF industry.

4.6. Is there any other feedback you would like to provide that isn't covered by the above?

Australia's feedstock advantage—canola, tallow, and used cooking oil—should be leveraged to build a globally competitive LCLF industry. Redirecting exports to domestic production will enhance fuel security, create regional jobs, and position Australia as a leader in low-carbon fuels.

Conclusion

Australia's Cleaner Fuels Program is a pivotal opportunity to accelerate decarbonisation where it matters most—hard-to-electrify sectors and the millions of vehicles already on our roads. Toyota supports a technology-neutral, multi-pathway approach that combines electrification with low-carbon liquid fuels to deliver immediate, scalable emissions reductions. Renewable diesel, ethanol blends, and SAF can unlock well-to-wheel carbon savings today while building a resilient domestic supply chain and creating regional jobs. By acting now, Australia can strengthen fuel security, leverage its feedstock advantage, and position itself as a global leader in clean transport solutions. Toyota stands ready to partner with government and industry to make this vision a reality.