

Biodiesel Blending Legislations Across Countries

CPOPC | Webinar on Biodiesel – Global
Biofuels Alliance | 25 Sept 2025

Setting the Context

CPOPC:

- Alliance of biodiesel-producing countries (Indonesia and Malaysia are members, with Colombia as an observer country).
- Thailand is also a key biodiesel producer, though it is not a CPOPC member

Mission:

- Advance sustainable palm oil and biodiesel as drivers of energy transition.

Focus:

- Position biodiesel as a legislation-backed climate and development solution, not just a fuel.

Palm Oil Producer Narrative:

- Turning agricultural surplus into sustainable energy.
- Together, Indonesia, Malaysia, Thailand & Colombia supply 20% of global biodiesel.

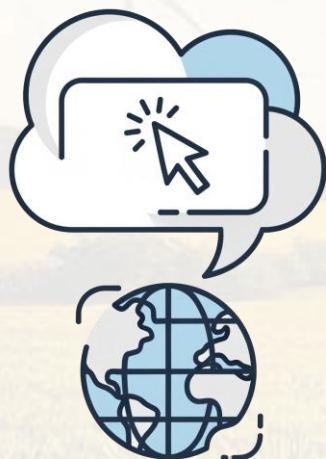
Global Relevance:

- Delivers on GBA's vision: equitable, low-carbon fuels with energy sovereignty for developing nations.



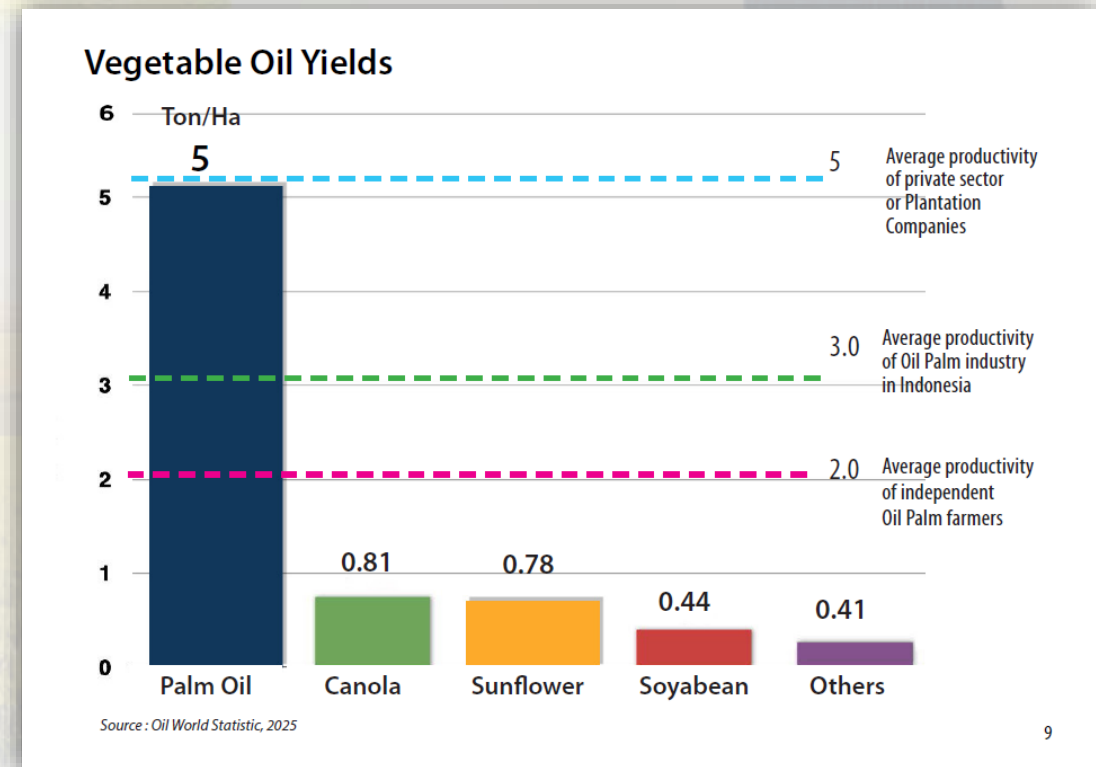
Biodiesel Production (million tonnes)*			
Country	2025F	2024	2023
Indonesia	13,20	12,12	11,44
Malaysia	0,85	0,93	1,30
Thailand	1,55	1,63	1,60
Colombia	0,79	0,78	0,78

*including HVO (Oil World, 2025)



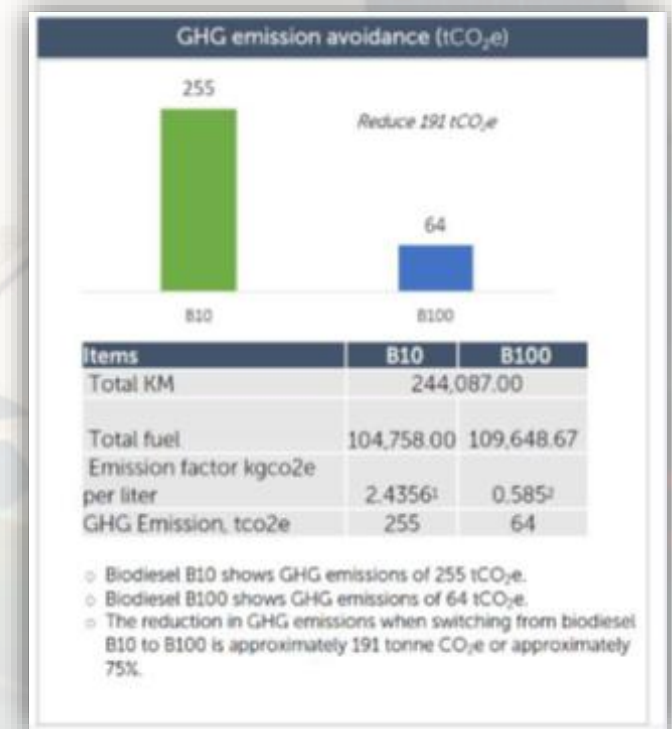
Palm Biodiesel in the Circular Bioeconomy

- Palm-based biodiesel **leverages circularity**: PFAD, UCO, and mill residue become low-carbon transport fuels.
- Palm oil delivers the **highest oil yield per hectare**, reducing land-use pressure compared to soy or rapeseed.



Palm Biodiesel in the Circular Bioeconomy

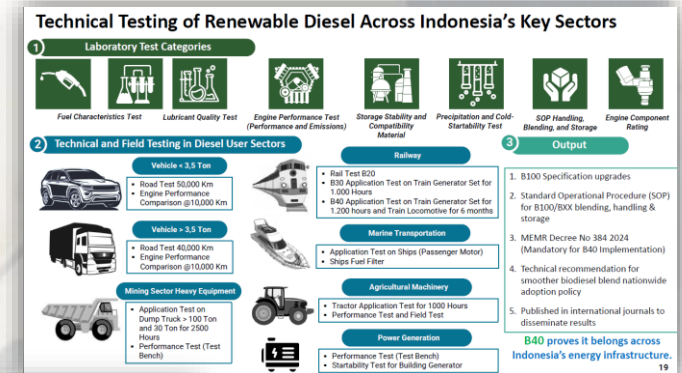
- **Indonesia's B40 rollout** will reduce ~40 million tonnes CO₂eq/year — significant for NDC compliance.
- **GHG reduction impact:** MPOB B100 trials show up to **75% emissions reduction** compared to B10.
- Mandates also **protect smallholders** (~1.9 million households in Indonesia) and reduce **fuel import dependency**.



Indonesia: Leading the Global Biofuels through B40

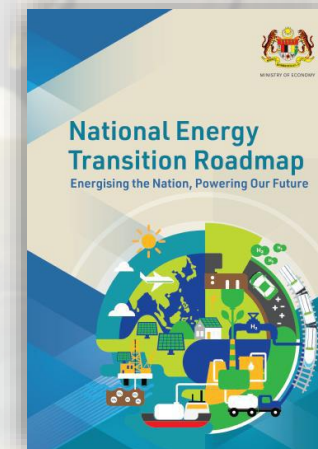
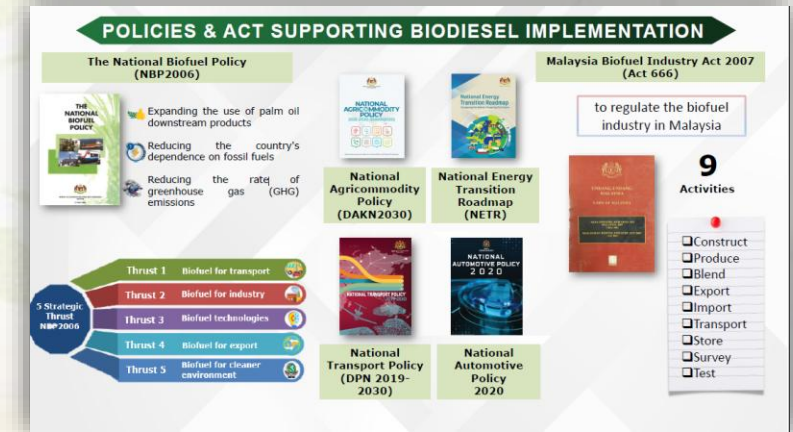


- **Legal journey:** From Decree 32/2008 → B40 mandate in 2025 → roadmap to B50 in 2026.
- **Key driver:** BPDPKS incentive, redistributing palm oil export levies to subsidize biodiesel in 2016.
- **Field implementation:**
 - B40 tested across cars, trucks, rail, mining, and marine.
 - Nationwide trials confirm no major engine problems.
 - Journalists and stakeholders invited to observe trials for transparency.
- **Challenges:**
 - Distribution/logistics uneven outside Java and Sumatra.
 - Variation in fuel quality noted in some storage/distribution points.



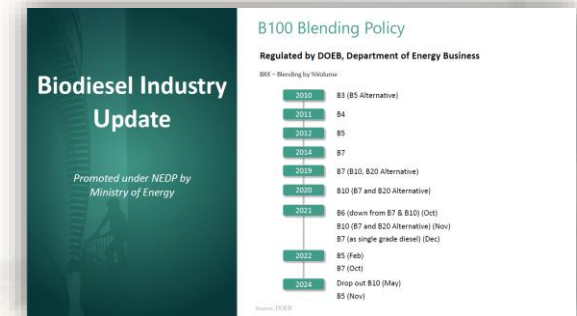
Malaysia: R&D-Driven, Legally Structured

- **Policy base:** Governed by Biofuel Industry Act 2007 (Act 666).
- **Mandates:**
 - B10 in transport (nationwide)
 - B7 in industry
 - B20 in transport (Pulau Langkawi, Kedah, Labuan & Sarawa)
 - B30 in transport planned in 2030
- **Field implementation:**
 - B100 trials in trucks (PETRONAS, Scania), passenger vehicles (Mazda CX8), ports, and KLIA ground equipment
 - Stable B100 performance: no jerking, no maintenance differences, ~25,000 km service interval confirmed
- **Challenges:**
 - Fuel filter clogging and stability issues occasionally observed in higher blends.
 - Trade barriers (EU RED III, EUDR, tariffs) pose external risks.



Thailand: Adaptive and Market-Responsive

- **Mandates:**
 - Flexible blending (B5–B10 for regular diesel, B20 as an alternative).
 - Adjustments tied to palm oil price/stock monitoring system.
- **Field implementation:**
 - Mandate flexibility avoids supply shocks.
 - Testing ongoing for marine biodiesel (B24 VLSFO) and SAF (1% by 2026).
- **Strengths:**
 - Biodiesel serves as a buffer stock policy to stabilize CPO market.
 - Moves toward bio-hydrocarbons and EV-biofuel hybrid strategy under TIEB 2037
- **Challenges:**
 - Frequent policy adjustments create uncertainty for industry.
 - EV expansion competes with biodiesel demand.



Colombia: Palm Biodiesel for Climate and Rural Development

- **Legal framework:**
 - Law 693 (2001) mandated biofuel blending.
 - Law 939 (2004) introduced tax incentives (VAT, excise exemptions).
- **Mandates:** B10–B12 in key cities since 2008; B20 targeted by 2030.
- **Field implementation:**
 - Bus and logistics fleets in Bogotá, Medellín show reliable operation on biodiesel.
 - ~70% CO₂ reduction verified in fleet operations.
 - 8 biodiesel plants integrated into fuel supply chain.
- **Socio-Economic role:**
- Biodiesel stabilizes palm oil demand, secures smallholder off-take, supports post-conflict rural inclusion.
- **Challenges:**
 - Higher logistics costs and weak distribution in remote regions.
 - Land-use and sustainability concerns require strong ISCC/RSPO alignment for export ambitions.



Comparative Policy Models

Country	Blend Mandate	Policy Style	Strategic Objective
Indonesia	B40 (2025)	State-subsidized, mandatory	Energy security, rural income
Malaysia	B10-B20	Regulated + R&D driven	Climate action, trade compliance
Thailand	B5 & B20	Market volatility management	Price stabilization, SAF readiness
Colombia	B10–B12	Incentive-driven, legislated blending	GHG reduction, rural inclusion, export readiness



Insight:

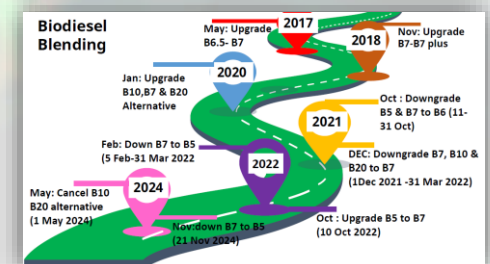
Each approach is calibrated to local realities — but all are delivering low-carbon fuels at scale.

Field Implementation Lessons

Country	On-the-Ground Deployment	Key Lessons
Indonesia	B40 tested in trucks, rail, marine, power, agriculture, mining	Engine reliability proven; nationwide rollout feasible; logistics challenges
Malaysia	B100 trials in trucks, cars, ports, mills; B20 in airports	Fuel stability (90+ days) confirmed; KPIs tracked; some filter/stability issues
Thailand	Flexible B5–B20 mandates; marine biofuels (B24 VLSFO); SAF pilots	Flexibility avoids shocks; biodiesel as buffer stock; SAF & EV integration
Colombia	B10–B12 in cities since 2008; fleets reliable; 8 plants in distribution	Verified ~70% CO ₂ reduction; rural impact; gaps in remote logistics & certification



Scania's Launch & Test Drive 2024 Event on August 15-17 with Trucks and Buses using B100



Cross-Cutting Lessons

- **Mandates work** when backed by *clear laws, stable funding, and technical testing*.
- **R&D and trials** build confidence for higher blends and wider sector adoption.
- **Flexibility vs. stability:** Some countries prioritize *long-term scaling* (Indonesia, Malaysia), others *market adaptation* (Thailand, Colombia).
- **Beyond energy:** Biodiesel delivers climate action + rural development + market stability.
- **GBA opportunity:** Harmonize blending roadmaps, align certification (ISPO, MSPO, TASPO, RSPO, ISCC), and build South–South cooperation for biofuel resilience.



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