

HOW GREEN ARE BIOFUELS?

Understanding the risks and
policy landscape in Indonesia



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INTRODUCTION

There have been longstanding issues with deforestation in Indonesia, home to some of the largest tropical hardwood rainforests and peatland expanses on the planet. Since the 1960s forests have been subject to commercial-scale exploitation, in particular the conversion of primary forests, which have been under sustained pressure from logging, timber extraction, and conversion to palm oil.

Yet according to the government, there has been signs of recent progress, with deforestation rates in 2020 falling to its lowest level since monitoring began in 1990¹. This progress can be attributed to policies such as the Government of Indonesia's moratorium on clearing primary forests and issuing licenses for new oil palm plantations, against a backdrop of declining palm oil prices; an unusually wet year causing flash flooding and landslides across the country, displacing 599,272 people in Kalimantan in January 2021 alone²; and a global economic decline due to COVID-19, resulting in less forest-clearing activities.

The Indonesian government has publicly stated its ambition for balancing environmental sustainability with social welfare and economic growth, as outlined by the BAPPENAS Green Growth Plan. Commitments to address deforestation, seen as one of Indonesia's primary environmental and social challenges, are a central part of this.

The government aims to reduce carbon emissions by reducing consumption of imported carbon-intensive fossil fuels. Since 2006, the government has issued several regulations to increase consumption of biofuels, particularly from palm oil-based biofuel.

As an agricultural commodity, palm oil plays a vital role in the development of the Indonesian economy. However, if palm oil-based biodiesel is set to take over from fossil-fuel energy consumption then its sustainability is of central concern. The issue of biodiesel is inseparable from the challenges that continue to surround palm oil, which remains one of the driving causes of deforestation in Indonesia³.

The sustainability of biodiesel will only succeed with coherent policy direction to support Indonesia's energy targets. This brief outlines potential policy conflicts and makes recommendations on how best to avoid them. It also provides an assessment of the environment-related corporate transparency of biofuel production for internal consumption in Indonesia, one of the several relevant measures required to ensure that the production of biofuels is deforestation-free.

BIOFUEL POLICY IN INDONESIA

Biofuels in Indonesia: background and context

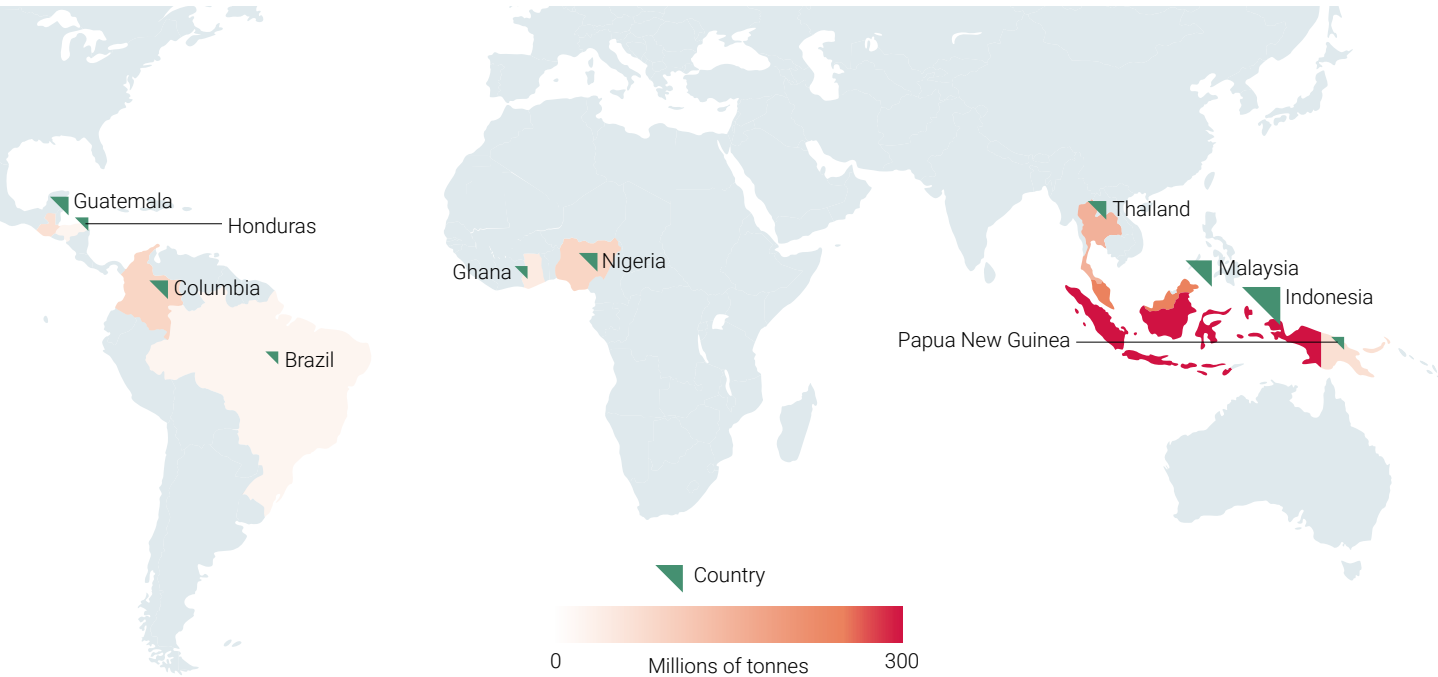
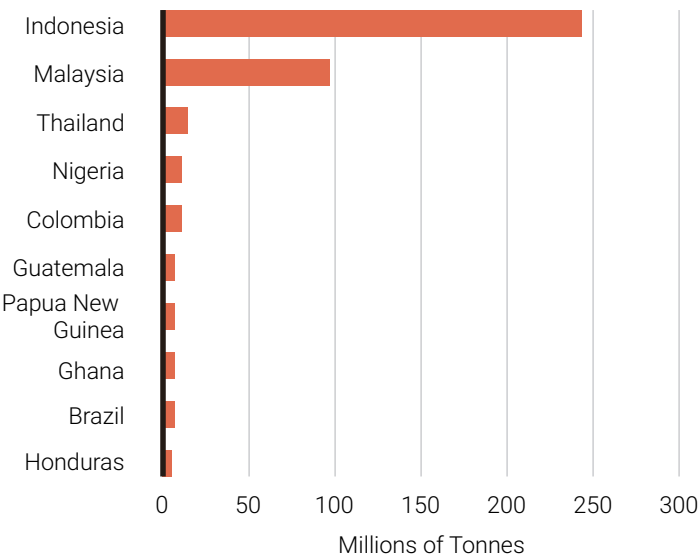
Fuel demand in Indonesia is growing rapidly. Oil consumption in the transport sector has risen from 10,711 kilotonnes of oil equivalent (ktoe) in 1990 to 51,490 ktoe in 2018⁴. The consumption of oil products in the transport sector (gas/diesel and motor gasoline) has constantly increased in the last decades, while the consumption of other oil products remains steady or decreased. The increase in oil consumption in Indonesia was driven by automotive fuel demand. Despite being part of the Organization of Petroleum Exporting Countries (OPEC), Indonesia became a net importer of oil in the 2000s⁵, representing an increasing burden on the country’s budget. To reduce those expenses and its increasing dependence on imported fuel in a context of growing demand, Indonesia has, since 2006, turned to biofuels from palm oil. With a larger yield than any other source of vegetable oil, palm oil is an ideal crop for biofuels from a production standpoint. It is cheaper than any other vegetable oil used in biodiesel production, is a perennial crop with a long life cycle of 25 years, productive over a significant duration of time⁶ and, more importantly, is a widely established crop in Southeast Asia.

The proportion of domestically consumed palm oil used for biofuel production in Indonesia has grown as a result of policy incentives to reduce the country’s dependency

on fossil fuels and to absorb excess supply of palm oil; a biodiesel mandate of 100% palm oil by 2026 would eliminate its need for fossil fuels entirely.

Indonesia is the largest palm oil producer in the world producing more oil palm fruit than the other nine countries in the top 10 put together (see Figure 1). 69% of the country’s production is exported, mostly to India⁷.

Figure 1: Top 10 oil palm fruit producers worldwide, 2019⁸



Indonesia's palm oil is mostly produced in private lands. Estates owned by large producers account for the production of 53% (8.68 million ha) of the country's palm oil, whilst smallholder palm oil production accounts for 40% (6.72 million ha)⁹. Government estates account for only a small part of the production. The total area used for the production of palm oil in the country has grown from 4 million ha in 2000 to 14 million ha in 2019¹⁰.

Palm oil expansion has been linked by some studies as a driver of deforestation in Indonesia. Recent research states that, between 2001 and 2016, oil palm plantations may have caused 23% of the total deforestation

nationwide¹¹. For that reason, Indonesia's decision to ramp up biofuel production will lead to a higher demand for palm oil, which will result in increased pressure on existing forests. Further loss of forests threatens the rich biodiversity in this vulnerable landscape, could exacerbate GHG emissions, divert palm oil from the food chain and expose those living in converted lands to extreme climate change events. The remainder of this section will present the most relevant regulatory developments in the biofuels sector in the country, exploring how those regulations might affect biofuel producing companies.



Biofuel regulation development in Indonesia

The development of biofuels in Indonesia started in 2006 when the government issued the National Energy Policy¹², which established that biofuels should comprise at least 5% of the country's energy mix by 2025. Indonesia further developed its energy regulations with a law¹³ aimed at further reducing the country's dependence on imported refined oil, while boosting the use of other energy sources, including biofuels¹⁴.

2008 saw a major development in Indonesia's biofuel policy. The Minister of Energy and Mineral Resources (MEMR) established¹⁵ the mandatory utilization of biofuels in the transportation, industrial, commercial, and electricity generation sectors, with a progressive target for biofuel blending over the 2008–2025 period¹⁶. The regulation also established that "enterprises performing trading business activities on biofuel as alternate fuel must possess a business permit"¹⁷ issued by the ministry.

Blending targets

In order to introduce biofuels into transportation fuel, it is commonly blended with fossil fuels in different concentrations. A mixture of 5% biofuels and 95% fossil-based diesel is usually called B5, one with 20% biofuels is called B20 and so forth. In 2020, the Indonesian government has a target of 30% biofuels in the fossil-based diesel, sometimes referred to as the B30 program.

Table 1: Main biofuel-related regulations in Indonesia

Year	Document	Main contents
2006	Presidential Instruction No. 1	Promote the supply and increased consumption of biofuels with the goal of replacing fossil fuels
2006	Presidential Regulation No. 5	Biofuels should comprise at least 5% of the country's energy mix by 2025
2007	Law No.30 of 2007	Achieve Indonesia's energy independence, boost the use of other energy sources, including biofuels
2008	MEMR Regulation No. 32	Mandatory utilization of biofuel in the transportation, industrial, commercial, and electricity generation sectors, with a progressive target for biofuel blending.
2015	MEMR Regulation No. 12	Sets certain sector industry obligations/ mandatory to use biodiesel and bioethanol as a fuel mixture, revises regulation No. 32
2015	Ministry of Agriculture Ministerial Regulation No. 11	Exempts palm oil plantations supplying palm oil for biofuel production from ISPO compliance
2017	Presidential Regulation No. 22 – National Energy General Plan (RUEN)	Establishes the national strategic plans for cross-sectoral energy planning and coordination
2018	MEMR Regulation No. 41	Makes mandatory for all Fuel Business Entities to mix biodiesel with diesel fuel based on the minimum percentage set by law.
2020	Presidential Regulation No. 44	Updates guidelines for the ISPO

Blending targets

Between 2013 and 2015, biofuel blending targets¹⁸ were amended several times¹⁹. Table 2 shows how these targets have changed. The responsibility for meeting these targets falls on companies²⁰.

Table 2: Indonesian Biofuel blending targets for most sectors²¹

	Year						
	2009	2010	2014	2015	2016	2020	2022 ²²
Blending % target	1%	2.5%	10%	15%	20%	30%	40%

Despite current policy incentives, Indonesia was falling short of biofuel blending targets until 2020. In 2018, it stood at 12.7%, well below the 20% target²³. Researchers identified that regulations are not effectively enforced and that it “is not seen as a binding mandate, especially for fuel suppliers not receiving subsidy funds²⁴”. In a bid to accelerate the achievement of the B20 mandate, in 2018 the MEMR required²⁵ the blending of the minimum percentage set by law in all sectors. The regulation states that the B20 mandate applies to diesel fuel processing and trading/importing companies for both subsidized and non-subsidized diesel fuel. Failure to comply with regulations can result in fines to the revocation of the company’s diesel fuel processing and/or trading license²⁶.

In 2020, the expected blended target by MEMR regulation no.12/2015²⁷ has been achieved, with the blending mix of biodiesel B30 starting implementation nation-wide. Despite biodiesel consumption being predicted to decline around 13% from the allocated production in 2020 due to

the economic slowdown from the COVID-19 pandemic, the government of Indonesia is still pressing ahead with the B30 program and aiming to launch the B40 program in 2022²⁸. In parallel, the government is also in the testing stage to develop D100 (green-fuel 100% plant-based) and this is expected to start production by 2023. The program is estimated to consume 30 million tonnes of Crude Palm Oil (CPO) annually²⁹.

Biofuel subsidies

Low global oil prices have necessitated government subsidies to support blending targets, due to the price of biodiesel being higher than the base diesel fuel price³⁰. These subsidies have been issued through the Indonesian Oil Palm State Fund (BPDPKS), which provides a subsidy to biofuel producers³¹. The amount paid is the price differential between fossil-based diesel and biofuels³². Not all producers are able to receive a subsidy however, with the government selecting producers who meet production requirements and allocating amounts to be produced by them³³. The Annex at the end of this briefing shows allocations from 2019 to 2021.

The subsidy is financed by tariffs on palm oil exports, yet a decrease in the price of this commodity in the last year due to COVID-19 has resulted in a financial shortfall of around 195 million USD that will need to be taken from the state budget. The biodiesel subsidy is set to be part of the government’s COVID-19 recovery plan, with Finance Minister Sri Mulyani Indrawati estimating that a total of 250 million USD will be needed to keep the biodiesel program afloat^{34,35}.

Regulatory incentives to increase biofuel production

The stage is set for increased biofuel production, so how does current policy facilitate anticipated expansion?

- Companies receive financial incentives to boost their biofuel production.
- Company revenue is protected by biofuel subsidies.
- At plantation level, biofuel producing companies did not incur ISPO fees for compliance verification between 2015 and 2020.

Therefore, as table 3 shows, these factors have contributed to the increasing number of biorefineries, and their subsequent capacity to produce biofuel, and ultimately the utilization of the higher supply.

Palm oil certification

There are sustainability certification schemes for palm oil production applicable in Indonesia, such as the voluntary Roundtable on Sustainable Palm Oil (RSPO), which through multi-stakeholder governance issues a global standard, and the Indonesia specific, mandatory ISPO. There is, however, no specific regulation on sustainability criteria for domestically consumed biodiesel³⁷. On the contrary, between 2015 and 2020, the Ministry of Agriculture specifically exempted palm oil plantations supplying palm oil for biofuel production from compliance with the ISPO³⁸. In a positive development the rules for the implementation of the ISPO were changed in 2020 to mandate most oil palm plantations once again in Indonesia, including those for biofuel production, to comply with ISPO.

Table 3: Biodiesel Utilization and capacity in Indonesia - 2009-2018³⁶

	Year									
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Blending % target	1%	2.5%	2.5%	2.5%	2.5%	10%	15%	20%	20%	20%
Blend rate	0.39%	0.66%	1.10%	1.81%	2.93%	5.42%	2.61%	10.78%	8.85%	12.7%
Biodiesel on-road use (Million liters)	95	178	287	535	838	1,476	665	2,621	2,272	3,650
# of biorefineries	20	22	22	22	26	26	27	30	32	31
Total biodiesel industry capacity (Million liters)	3,128	3,921	3,921	4,881	5,670	5,670	6,887	10,898	11,547	11,357



Ensuring environmental safeguards

An increase in production and capacity is likely to pose a major threat to Indonesia's forests if not managed and monitored carefully. The margin for error is small, regulation that aims at stimulating an increase in the production of palm oil must have significant environmental safeguards. A recent report from Coaction Indonesia shows that "looking at the projected demand for biodiesel, it can be concluded that the demand for domestic CPO will continue to increase. This increase is also directly proportional to land requirements, especially because the average productivity per hectare is still low³⁹".

The lack of mandatory certification, the provision of subsidies, and the aggressive regulatory push for more oil palm production (e.g., fines for B20 non-compliance) create conditions for producers to maintain business-as-usual production systems instead of investing in more sustainable production innovations, such as increasing land productivity. Therefore, biofuel regulations in Indonesia, as they stand, may lead to increased pressure on Indonesian forests.

Even when biofuel policies show good intentions towards reducing the environmental impact of increased production, they fall short regarding implementation details. Indonesia's 2006 biofuel plan proposed an expansion of palm plantations towards unproductive or damaged forest lands⁴⁰. The intended increase in production would require more than 10 million hectares of land, as identified by a report from the government's National Biofuel Team (Timnas BBN). The same report, however, "only identified 0.3 million hectares of degraded land as suitable for biofuel production, exposing a large gap between the amount of biofuel that can be produced without causing environmental damage and what would be required under the Timnas BBN plan⁴¹".

Crucially, biofuel policies are also often at odds with stated environmental objectives set by the Indonesian Government. The next section will analyze the contradictions between the environmental risks posed by the regulatory framework driving biofuel expansion and the targets set by the Indonesian government to reduce deforestation and emissions.



DISPARITIES BETWEEN INDONESIA'S BIODIESEL AND ENVIRONMENTAL REGULATION

The production of biodiesel shows growing trends in the country, almost doubling the production in the past 10 years⁴². Based on these developments, the Indonesian government prioritized the development of biodiesel and set a target to increase production, with 15 million kilo Liter (mkL) to be produced by 2030 and 54.2 mkL by 2050. To support the achievement of that target, the government will allocate 4 million ha of area to support biodiesel production by 2025⁴³. Parallel with the government's ambition in increasing the development of the biodiesel program, a series of environmental commitments and targets, as well as regulations to limit deforestation has been decreed by the government.

Moratorium on new palm oil plantations

Presidential Instruction No.8/2018 established a moratorium on permits for new palm plantations for 3 years, as well giving the government authority to review existing licenses and revoke them if the area has not yet been cleared⁴⁴. It aims to promote better palm oil governance, reduce greenhouse gas emissions from land use change, and increase palm oil productivity. The effectiveness of the moratorium is, however, questionable, as data from the Ministry of Agriculture show that the area of plantations expanded from 14 million hectares in 2018 to more than 16 million in January 2020⁴⁵.



Palm oil productivity (Oil Palm Plantation Rejuvenation Program)

Increased plantation productivity is seen as one of the alternatives to produce more palm oil without increasing the planted area. Productivity, however, has long been an issue in Indonesia, with a particularly stark gap between private companies and smallholders. The low intensification, and often unsustainable farming practices, along with less government support for smallholders⁴⁶, results in smallholders producing on average 2-3 ton/ha/year, while private companies producing on average 4 ton/ha/year⁴⁷.

To address low productivity, the Indonesian government launched the Oil Palm Plantation Rejuvenation⁴⁸ program (*Peremajaan Sawit Rakyat - PSR*) in 2017. By 2020, only 11%⁴⁹ of the program's total target has been achieved. There are concerns of a lack of clear targets and clear guidance on how to increase smallholder productivity⁵⁰. The government is also considering stopping the blending program at a maximum 50% blend if there is no further improvement on the production yield of the palm oil⁵¹.

Without a significant improvement in palm oil productivity, the current blended biodiesel target could potentially drive 4.5 million hectares in additional forest loss⁵². These losses will likely rise with increased biofuel production to curb the country's current daily consumption of 1 million barrels of gasoline, as the Minister of Mineral and Energy Resources warned in December 2020. An additional 9 to 15 million ha of new palm oil plantations⁵³ is expected to be required to meet demand.

Omnibus law

In 2020, the Indonesian House of Representatives approved the Job Creation Law (Law No. 11/2020 on Job Creation, commonly known as the “Omnibus Law”). The Omnibus Law amends several sectors, including the environment and forestry sectors, allowing the government to approve agribusiness investment in designated forest and peatland areas that are currently protected by a deforestation moratorium. Moreover, the bill eliminates the legal requirement to maintain a minimum of 30% primary forest cover on provincial land and waives the legal liability for companies that experienced fires on their concession areas⁵⁴.

While the Omnibus Law may increase attractiveness to invest in Indonesia due to easier capital flows⁵⁵, it could escalate the risk of deforestation and to customary land use rights. Sectors such as palm oil have made progressive efforts to reduce forest destruction through “No Deforestation, No Peatland, No Exploitation” (“NDPE”) policies, which may be reduced in significance as a result of the Law. Despite the growing push for financial institutions to reduce their contribution to deforestation, the political outlook also needs to be consistent to enable both economic growth and sustainable practices for plantations.

Nationally Determined Contribution (NDC)

In addition to those policies, Indonesia has other overarching environmental targets that might be affected by a potential increase in palm oil production. The most relevant of them is Indonesia’s NDC which commits to reduce Indonesia’s GHG emissions by 29% on its own efforts, and up to 41% with international support⁵⁶.

Considering that main contributing sector for Indonesia’s emissions is Land-use Change and Forestry (LUCF), an important part of the committed reductions will have to come from that sector. Actions to reduce deforestation and forest degradation are integral parts of the NDC, although no specific actions on palm oil are mentioned in the NDC for the LUCF sector.

Renewable Energy

Another path aimed by the government to reduce emissions is upscaling the development of renewable energy. The Energy sector has been targeted to reduce 314-398 Mt CO₂e from the business as usual (BaU) emission (1,669 Mt CO₂e) by 2030⁵⁷, of which 54% (170.42 Mt CO₂e) is to be achieved by contributions from renewable energy⁵⁸. These plans align with the Indonesian government’s objective of having renewable energy covering 31% of the country’s primary energy mix by 2050 (23% by 2025), as stipulated under the National Energy Regulation (KEN)⁵⁹. In 2017, to support the implementation of KEN, the government has published National Energy General Plan (RUEN)⁶⁰.

REDD+

Indonesia has been involved with Reducing Emissions from Deforestation and Forest Degradation (REDD+) from an early stage. REDD+ has led to numerous achievements, especially regarding a better understanding of the underlying drivers of deforestation, but progress has been slower than hoped, mainly due to susceptibility to political turnover at each election cycle, focus on technicalities rather than on directly addressing drivers of deforestation, varying rates of progress at the subnational level, among other issue⁶¹.



Policy incoherence is a risk

The policies described above represent important and positive commitments towards reducing deforestation and GHG emissions in Indonesia. However, the policies in place to expand the production of biofuels, described in Section 1, have the risk of contradicting the country's sustainability efforts. The expansion of palm oil plantations required to provide the necessary raw material for biodiesel production in Indonesia is likely to increase pressures on Indonesia's forests, being thus counterproductive to the Indonesia's sustainability objectives.

Unless the sourcing of biodiesel is deforestation-free, its claimed "green fuel" status is both inaccurate and misleading. The production of plant-based diesel

was originally conceived as an alternative to increase Indonesia's fuel security, as part of the country's renewable energy strategy, and as an additional contribution to reduce carbon emissions and support the Paris Agreement's and SDGs' commitments.

For it to be sustainable and categorized as a renewable energy source, biofuel production requires coherent policies among government sectors and the adoption of stringent forest safeguards within the raw material supply chain. Transparency regarding the environmental aspects of biodiesel production is one among several actions required to achieve a deforestation-free biodiesel supply chain.



TRANSPARENCY OF INDONESIAN BIOFUEL PRODUCING COMPANIES AND ITS IMPACTS ON FORESTS

This section will provide an assessment of Indonesian Biofuel producers in terms of their environmental transparency. A variety of measures is required to ensure that companies to adopt more environmentally responsible behaviors. Increased transparency is one of them, and it promotes sustainability in several ways:

- allows both customers and stakeholders to assess progress on companies' deforestation commitments,
- facilitates the risk assessment and identification of opportunities by investors and purchasing companies,
- fosters compliance with regulatory requirements,
- strengthens accountability,
- improves the dialogue between private and public entities and protects smallholders.

The assessment does not intend to be exhaustive; it will assess the companies, shown in Table 4, appointed to supply biodiesel to the B20/B30 program in 2019 and 2020. The exact allocation for each producer is shown in the Annex.

The majority of companies supplying the B20/B30 program are subsidiaries of larger companies; the 20 supplying companies represent 10 larger companies, 5 of which are listed as amongst the world's largest traders/processors in a recent situational analysis commissioned by CDP⁶⁴. This concentration is likely caused by the large capital requirements for refinery ownership⁶⁵. Of the companies in table 4, only three scored either an A or B (good) in their disclosure to CDP; these companies also displayed a higher SPOTT score than the other companies. This shows that whilst certain companies perform well, there is significant opportunity to improve reporting of standardized information by the sector to support traceable and sustainable palm oil.

Table 4: B20/B30 program suppliers

Supplier Name	Parent Company	Headquarters (Parent Company)	CDP Palm Oil Score 2019 (Parent Company)	CDP Palm Oil Score 2020 (Parent Company)	SPOTT 11/2020 (Parent Company, E score)	RSP0 Member (Parent Company)
Smart Tbk	Golden-Agri Resources	Singapore	A-	A-	81.2%	Yes
Sinar Mas Bio Energy						
Musim Mas	Musim Mas	Singapore	B	B	85.7%	Yes
Intibenua Perkasatama						
Sukajadi Sawit Mekar	Wilmar International	Singapore	B-	A-	88.9%	Yes
Wilmar Bioenergi Indonesia						
Wilmar Nabati Indonesia						
Multi Nabati Sulawesi						
Energi Unggul Persada	Apical ⁶³	Singapore	N/A	B	82.5%	Yes ⁶³
Cemerlang Energi Perkasa						
Kutai Refinery Nusantara	BEST Group	Indonesia	F	F	1.8%	No
Batara Elok Semesta Terpadu						
Darmex Biofuels	Darmex Agro	Indonesia	F	F	1.3%	No
Bayas Biofuels						
Dabi Biofuels	Permata Hijau Group	Indonesia	F	F	37.2%	Yes
Pelita Agung Agrindustri						
Permata Hijau Palm Oleo	PT Tunas Baru Lampung	Indonesia	F	F	14.2%	Yes
Tunas Baru Lampung						
LDC Indonesia	Louis Dreyfus Company	Netherlands	F	F	62%	Yes
Ciliandra Perkasa	First Resources	Singapore	F	F	64.08%	Yes

CDP Disclosure

The analysis focuses on parent companies since none of the subsidiaries have been invited to disclose to CDP⁶⁶. Golden-Agri Resources, Musim Mas and Wilmar International received good scores for their Palm Oil disclosures (from B- to A) in 2019 and 2020, with Wilmar International improving from B- to A- in 2020. Six of the ten parent companies, including all four headquartered in Indonesia, received a F score in both years, they did not disclose to CDP.

Golden Agri-Resources, which received an A- score, reports that two biodiesel plants have received ISCC (International Sustainability and Carbon Certification), and that all biomass intended for biofuels in destinations such as Europe are ISCC certified. However, it does not provide information related to biofuels intended for consumption in Indonesia. Apical, Wilmar International, and Musim Mas reported that biofuels are part of their business activities, but also did not provide additional information on domestic consumption in Indonesia.

Sustainability Policy Transparency Toolkit (SPOTT) Evaluation

Another important evaluation of environmental transparency in the Palm Oil sector is performed by SPOTT⁶⁷. It assesses “palm oil producers, processors, and traders on the public disclosure of their policies, operations and commitments to environmental, social and governance (ESG) best practice⁶⁸”. The scores shown in Table 4 are the environmental scores of the companies. SPOTT defines transparent information as “information communicated by a company via publicly available materials that are freely and readily accessible to all stakeholders⁶⁹”. SPOTT’s evaluation does not necessarily mean that a company is effectively implementing its commitments on the ground, but that they are being transparent in their ESG reporting. SPOTT’s scores show great variation between companies, with some such as Musim Mas with very high scores (for having, among several other sustainability indicators, a time-bound commitment to achieve 100% traceability to mill level), and others such as BEST Group and Darmex performing poorly.

Roundtable on Sustainable Palm Oil (RSPO)

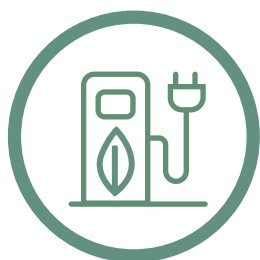
Among several other requirements, participation in the RSPO certification scheme is another indication of a company’s willingness to increase transparency. RSPO, through stringent certification and global setting of standards via multi-stakeholder involvement, intends to ensure the credibility of palm oil sustainability claims⁷⁰. Most biofuel suppliers reviewed in this briefing are members of the RSPO, with exception of Darmex Agro who had its membership terminated in 2013 by an RSPO Complaints Panel decision due to its plantation subsidiary, PT Duta Palma Nusantara, planting on peatland, clearing forest without a High Conservation Value (HCV) assessment, and using fire for clearing⁷¹. The RSPO ACOP is the mandatory report issued by members to demonstrate their progress towards 100% sustainable palm oil⁷². However, none of the companies’ RSPO Annual Communication of Progress (ACOP) for 2019, the latest publicly available, displays specific information on biofuels.



CONCLUSIONS AND RECOMMENDATIONS

Indonesia has a way to go to ensure that its biofuels program lives up to its green credentials. Sustainable biodiesel is at the crux of Indonesia's sustainable development, requiring careful policy consideration of economic, social and environmental issues. Government policy can improve environmental safeguards for palm oil production by focusing on yield rather than expansion, smallholder productivity and the integration of sustainability standards as the bare minimum in biodiesel production. By increasing public-private sector dialogue, policy can help to provide a pathway to better sustainability standards throughout the biofuel industry resulting in higher yields, more efficient use of resources, and protection of human rights. Setting all these actions in motion will no doubt reduce the need to expand plantations, causing potentially irreparable damage to biodiversity and the environment.

Policy Recommendations



1 Alignment of biofuel and forest policy.

- ▼ A lack of policy coherency threatens the government of Indonesia's sustainability commitments to the Paris Agreement and the Sustainable Development Goals. Whilst Indonesia has established a moratorium on new palm oil plantation licenses, the acceleration of its biodiesel program contradicts those commitments as this will likely require 9 – 15 million hectares of additional palm oil plantations⁷³. The energy transition from fossil fuels to biofuels is an interrelated policy challenge and should be situated within the carrying capacity of the Indonesia's forests environment to ensure long-term sustainability.



2 Improve environmental safeguards for palm oil production.

- ▼ There should be agreed cut-off dates within the Indonesian Sustainable Palm Oil (ISPO) for land clearing for biodiesel feedstock. The Round Table for Sustainable Palm Oil (RSPO) has a cut-off date of high conservation value clearing in 2005, whilst the Forest Stewardship Council (FSC) has a cut-off date of 1994. There is no such regulation within the ISPO, which is a policy gap that must be addressed to prevent further conversion of forests into plantations⁷⁴.
- ▼ Biodiesel production guidelines currently focus on the blending target and quality level. The integration of sustainability aspects within the industry's regulations is still lacking and needs to be scaled up. The International Sustainability and Carbon Certification (ISCC) is one of the standards that can be referred to, but its uptake remains low, due to its only mandated for the European Union market. While mandatory ISPO as the standard for biodiesel feedstock has been introduced, its implementation needs to be better monitored.



3 Enhance corporate environmental disclosure, including biodiesel supply chains.

- ▼ Mandatory transparency is needed at both the parent company level as well as its subsidiaries. Despite environmental commitments of parent companies, even those leading on sustainability action, the complexity of corporate structures and the biodiesel supply chain hinders the ability of companies to ensure traceability to plantations and guarantee deforestation-free operations. Enforcing disclosure on environmental issues can help the government to understand companies' roles in the biodiesel supply chain and better identify policy intervention areas.



4 Increase public-private dialogue and cooperation.

- ▼ To fulfill the new biodiesel demand, the government must focus on supporting the increase of smallholder yield production, by providing clear targets and guidance, as well as to support the inclusion of smallholders within the biodiesel supply chain.
- ▼ Many companies in palm oil supply chains are already implementing commitments and NDPE policies relating to other oil palm products. They are often equipped with the right tools to address deforestation risks but have not used those in relation to their palm oil business due to lack of regulatory pressure. Increased dialogue and cooperation between public and private sectors can contribute towards identifying win-win solutions and understanding how the private sector can contribute towards government goals whilst meeting their commitments.





Company allocation for the B20/B30 program, 2019-2021, kL

2019	
Company	Volume
Wilmar Nabati Indonesia	904.431
Wilmar Bioenergi Indonesia	844.949
Musim Mas	745.504
Cemerlang Energi Perkasa	449.753
LDC Indonesia	292.927
SMART Tbk	269.914
Sinarmas Bio Energy	262.011
Permata Hijau Palm Oleo	261.183
Multi Nabati Sulawesi	253.427
Intibenua Perkasatama	241.053
Bayas Biofuels	229.075
Kutai Refinery Nusantara	220.189
Sukajadi Sawit Mekar	219.677
Tunas Baru Lampung	216.875
Dabi Biofuels	207.344
Batara Elok Semesta	175.859
Ciliandra Perkasa	171.854
Pelita Agung Agrindustri	145.396
Darmex Biofuels	85.680

2020 ⁷⁵	
Company	Volume
Wilmar Nabati Indonesia	1.374.000
Wilmar Bioenergi Indonesia	1.323.000
Musim Mas	1.085.000
Bayas Biofuels	862.000
Cemerlang Energi Perkasa	483.000
LDC Indonesia	434.000
Permata Hijau Palm Oleo	417.000
Sinarmas Bio Energy	396.000
Multi Nabati Sulawesi	393.000
SMART Tbk	383.000
Intibenua Perkasatama	354.000
Tunas Baru Lampung	342.000
Kutai Refinery Nusantara	336.000
Sukajadi Sawit Mekar	322.000
Darmex Biofuels	287.000
Batara Elok Semesta	287.000
Ciliandra Perkasa	283.000
Pelita Agung Agrindustri	230.000

2021 ⁷⁶	
Company	Volume
Wilmar Nabati Indonesia	1.375.486
Wilmar Bioenergi Indonesia	1.324.226
Musim Mas	882.530
Cemerlang Energi Perkasa	483.263
Kutai Refinery Nusantara	398.979
Permata Hijau Palm Oleo	396.793
Multi Nabati Sulawesi	392.996
LDC Indonesia	386.610
Sinarmas Bio Energy	364.700
SMART Tbk	352.782
Bayas Biofuels	349.180
Tunas Baru Lampung	342.311
Energi Unggul Persada	318.953
Intibenua Perkasatama	287.944
Batara Elok Semesta	273.274
Sukajadi Sawit Mekar	261.767
Ciliandra Perkasa	259.882
Pelita Agung Agrindustri	239.215
Dabi Biofuels	218.618
Darmex Biofuels	173.974
Darmex Biofuels	116.517

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