

Research Article

Indonesia's Strategic Response to North–South Tensions: A Policy Analysis of Biodiesel Development during the Prabowo Administration

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Abstrak: EU regulations such as RED II, which discriminate against CPO commodities produced by Southern countries, again reflect the tension between Northern and Southern countries, particularly on environmental issues. The research will analyze Indonesia's foreign policy strategy in responding to global pressure on CPO commodities through biodiesel policy, using a qualitative-descriptive approach and process tracing method. This research shows that by utilizing biodiesel as an instrument of energy diplomacy, Indonesia not only strengthens national energy resilience but also enhances Indonesia's bargaining position in international energy diplomacy, particularly through South-South Cooperation. With Indonesia's adaptive response to European Union pressures such as the WTO lawsuit, and diplomatic cooperation in international forums like the G20, it indicates that through biodiesel policies, Indonesia is not only focusing on the technical dimension but also the strategic dimension in advocating for Indonesia's national interest amidst systemic imbalances.

Keywords: Biodiesel; Energy Diplomacy; Foreign Policy; North-South Tension; CPO; Energy Security.

1. Introduction

Human life today is inseparable from energy. Moreover, the ever-increasing human population from year to year has become one of the indicators of the high dependence on energy. According to projections by the International Energy Agency (IEA), global energy demand is projected to increase by 45%, with an average annual growth of 1.6% until the year 2030. The main issue is that 80% of this energy demand is still supplied by fossil fuels. The increasing annual energy demand poses a significant challenge for countries worldwide to optimize their energy production efforts while considering sustainability and impact on the surrounding environment, including in Indonesia. Moreover, fossil fuels are non-renewable fuels which means governments must work hard to regenerate energy supplies.

The limited availability of fossil fuels has prompted many countries, including Indonesia, to race in search of alternative fuels to meet global energy needs. In Indonesia, the government is also actively pursuing alternative fuels by focusing on renewable energy sources such as solar, wind, geothermal, and biodiesel. As stated in President Prabowo Subianto's national development vision Asta Cita, particularly point number 2: "Strengthening the national defense and security system and promoting national self-sufficiency through food, energy, water, creative economy, green economy, and blue

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economy,” it reflects Indonesia’s strong commitment to achieving renewable energy self-sufficiency through biodiesel. In his inaugural address, President Prabowo also emphasized the importance of national preparedness in facing increasingly dynamic global geopolitical shifts, along with the need for self-reliance in the energy sector. This is well supported by Indonesia’s geographical condition, which is rich in natural resources such as coal, oil, gas, and renewable energy, providing the nation with great potential to achieve energy independence. Since 2008, Indonesia has formulated a mandatory biodiesel policy to utilize crude palm oil (CPO) for biodiesel. This policy began with B2.5 and progressively targeted B35 as the national biodiesel blending target by 2024.

According to the official website of the Ministry of Energy and Mineral Resources of the Republic of Indonesia, the government does not intend to stop at B30 but will continue to expand biodiesel implementation focused on green and renewable energy, as marked by the successful trial of 2.4% bioavtur in the international aviation sector. This aligns with the vision and mission of the International Civil Aviation Organization (ICAO) and the United Nations Framework Convention on Climate Change (UNFCCC). Biodiesel, as a reliable alternative to fossil fuels, plays a strategic role due to its positive impact in various sectors. Biofuels derived from renewable sources add value through the downstream development of domestic agriculture, stabilize crude palm oil prices, improve the welfare of smallholder farmers, emit fewer greenhouse gases compared to fossil fuels, reduce imported fuel dependency, save national foreign exchange reserves and trade balance, create job opportunities, and strengthen energy security ([1]).

Biodiesel has become a strategic resource for renewable energy development in Indonesia due to the abundance of palm oil commodities and the vast areas of palm plantations. According to Statistics Indonesia (BPS), the total area of palm plantations reached 15.34 million hectares in 2023. Indonesia's palm oil production is estimated to have reached 47.8 million tons in 2023. This figure indicates that Indonesia’s palm oil production has surpassed that of Malaysia, one of the world's largest palm oil producers.

The increasing proportion of biodiesel blends in the transportation sector reflects the government’s ambition to boost renewable energy usage. Since 2009, the percentage of fatty acid methyl ester (FAME) in diesel fuel has steadily increased. The following chart illustrates the trend in biodiesel blending growth over the years, reaching 35% as of February 2023.



Figure 1. Indonesia’s Biodiesel Blend Increase[2], [3]

The use of biodiesel in power generation in Indonesia has reached a significant level, with the increasing adoption of B20 and B30 blends. In 2019, biodiesel consumption for power plants reached 2,158 kiloliters, up from 1,641 kiloliters the previous year. In addition, 4,425 units running on B30 were prepared for operation in Diesel Power Plants (PLTD) across Indonesia. Previously, the use of B20 contributed to the absorption of 451,723 kiloliters of FAME. This trend reflects the vast potential of biodiesel in accelerating the renewable energy mix in Indonesia, in line with the country’s national energy transition targets.

As a major producer of crude palm oil (CPO), Indonesia has drawn significant international attention, including from the European Union, particularly in relation to palm oil exports. However, in 2017, the EU Parliament issued the Resolution on Palm Oil and Deforestation of Rainforests, alleging that large-scale palm oil production in Indonesia contributed to forest fires and deforestation. The resolution also claimed that palm oil production in Indonesia violated human rights through the employment of underage workers and triggered conflicts with local and Indigenous communities.

In this context, the European Union links environmental issues with trade issues through the EU Emission Trading Scheme (EU-ETS) which implements a cap and trade system, namely providing a limit on a country's total emissions which will continue to excess unused emissions. Based on this system, the European Union stated that Indonesia is one of the countries that does not meet the standards. As a result, in July 2013, the EU imposed provisional anti-dumping duties on Indonesian biodiesel ranging from 2.8% to 9.6%. This policy significantly impacted Indonesia, which heavily relies on palm oil as one of its primary export commodities. Suhariyanto, then Head of Statistics Indonesia (BPS), stated that this EU policy caused trade deficits in several countries, including a 22% deficit with the UK and 39% with the Netherlands. On April 8–9, 2019, Indonesia joined a Joint Mission to Belgium as an effort to pressure the EU into revoking this discriminatory palm oil policy (GIMINI, 2019) [4].

In 2010, the World Energy Council used the Energy Trilemma consisting of energy security, energy equity, and environmental sustainability as an indicator to measure a country's energy performance (World Energy Council, 2024)[5]. The excessive use of coal, natural gas, and oil has contributed to global warming, posing serious environmental threats. In addition, the accumulation of fossil carbon pollutants in the atmosphere in the form of greenhouse gases, methane gas and carbon dioxide is an example of the many reasons why the international world has begun to work towards an energy transition towards renewable energy, as was done through the Paris Agreement.

Indonesia regulates its national energy policy under Government Regulation No. 79 of 2014, with further details in Presidential Regulation No. 22 of 2017. However, Indonesia's long-standing reliance on fossil fuels remains one of its biggest challenges (Wardhana & Marifatullah, 2020)[6]. Since 2024, Indonesia's process in pursuing an energy transition has experienced significant slowdown, leading to a revision of the target for achieving renewable energy in 2025 from 25% to 17%-19% (Jati, 2024)[7]. Furthermore, it was noted that around 90% of provinces in Indonesia are not ready to implement the energy transition. The majority of the western region has been categorized as capable and ready to implement the energy transition, while many in the east and outside Java still face problems in the economic sector, clean energy initiatives, and inadequate government capacity and supporting facilities. In addition, the energy transition that is currently taking place in urban areas, such as electric vehicle subsidies, has created a significant gap from rural communities[8].

1.2 Problem Formulation

Based on the background previously explained, Indonesia's biodiesel policy during the Prabowo administration is one of the interesting policies to examine further. Therefore, the problem that can be discussed is: How is Indonesia's foreign policy strategy during President Prabowo's era in achieving energy security through biodiesel policy amidst global pressure on CPO products?

1.3 Objective

This study aims to identify and analyze the development of biodiesel as a foreign policy strategy of Indonesia to ensure energy security, and to explain Indonesia's response to global pressure on CPO products, particularly pressure from the EU.

1.4 Significance

This research provides a significant contribution to the development of literature in the field of International Relations. Theoretically, this study on Indonesia's foreign policy analysis in creating energy security during President Prabowo's administration can enrich the literature on strategies of developing countries in building energy diplomacy to face global challenges.

This research offers critical thinking space regarding Indonesia's position and the role of foreign policy in the global energy security system. Practically, this study can serve as a reference for formulating Indonesia's foreign policy that aligns with national energy security interests. It also offers relevant insights for energy industry stakeholders to understand the direction of Indonesia's foreign policy and the potential of energy diplomacy as an instrument to achieve national energy security.

2. Literature Review and Conceptual Framework

2.1. Literature Review

Research conducted by Abdurachman & Prakoso (2017)[9], Abidin (2023)[10], and Bosman & Putra (2024)[11] indicates a tendency for Indonesia to actively utilize the energy sector, particularly biodiesel, as an instrument to strengthen national self-reliance amidst pressure from developed countries. Abdurachman and Prakoso (2017)[9] highlight Indonesia's role in South-South Cooperation as a strategic effort to bridge the interests of the Global South, which is relevant to Indonesia's position in addressing North-South tensions. Meanwhile, Abidin (2023)[10] shows that the development of the palm oil industry and biodiesel policy are key pillars in reinforcing national energy security, although challenges in governance and international recognition remain. Bosman & Putra (2024)[11] emphasize the importance of the state's role in directing renewable energy policy to reduce dependence on fossil fuels and strengthen Indonesia's bargaining position globally. Their focus on South-South Cooperation as a tool for economic diplomacy provides a foundation for understanding how Indonesia positions itself internationally.

However, in contrast to these perspectives—which generally support national energy strategies as rational responses to external pressure—Firdaus & Wibowo (2024)[12] and Permana, et al. (2024)[13] offer more critical viewpoints. Firdaus & Wibowo (2024)[12] argue that energy policy in the Prabowo era, especially through the B50 biodiesel program, tends to prioritize national energy security without considering principles of just transition and local community participation. They suggest that such a strategy has the potential to trigger land conflicts and exacerbate social inequality. Meanwhile, Permana, et al. (2024)[13] highlight how Indonesia employs the narrative of sustainable development as a legal tactic in international forums such as the WTO to resist Global North dominance, while simultaneously prioritizing sovereignty rhetoric at the domestic level. These findings reveal a disjunction between international legal strategies and domestic policy implementation, which remains driven primarily by national interests.

Based on the literature review, this study presents novelty by specifically analyzing Indonesia's biodiesel policy, particularly during President Prabowo's administration, within the framework of North-South tensions—especially regarding global sustainability standards, technology access, international cooperation, and the influence of trade policies from developed countries. This research relates to previous studies that discuss Indonesia's role and position in North-South tensions and its relevance to energy security through biodiesel policy. However, most previous research has focused on Indonesia's energy policy from the perspective of national self-reliance (Abidin, 2023)[10], South-South cooperation (Abdurachman & Prakoso, 2017)[9], or the state's role in renewable energy development (Bosman & Putra, 2024)[11]. On the other hand, more critical research, such as that by Firdaus & Wibowo (2024)[12] and Permana, et al. (2024)[13], explores social exclusion and international legal strategies but has not centered biodiesel policy within the context of structural tensions between the Global North and Global South.

This research argues that Indonesia's energy policy—particularly in biodiesel development—is a form of resistance to the dominance of global standards often set by developed countries. This is an approach that has not been comprehensively addressed in previous studies. The research further discusses how to maximize domestic resource potential, such as palm oil, for biodiesel development. Indonesia seeks to strengthen its energy security while enhancing its bargaining power through energy diplomacy within a hierarchical international system. In addition, this study underscores the importance of integrating sustainability principles and social inclusion to ensure that energy strategies not only strengthen the country's global position but are also fair and contextually appropriate for domestic communities.

2.2 Conceptual Framework

2.2.1 *North-South Tension*

North-South Tension, as a concept in international relations studies, provides a framework to understand the phenomenon of structural inequality between developed countries (Global North) and developing countries (Global South). This inequality is often multidimensional, spanning across economic, technological, human resource, and global regulatory aspects. These systemic tensions cannot be separated from the social construction of the international system, in which formerly colonized nations are often weaker and more vulnerable compared to former colonial powers. This disparity is evident in the categorization between “Movers & Shakers,” which highlights the clear gap between the Global South and Global North, both in academic discourse and in real-world global politics (Ayoob, 2002)[14].

In North-South Tension, conflict may arise due to double standards from the Global North in addressing global issues. Acts of protectionism in technology and energy access by Global North countries further exacerbate existing structural inequalities. In the energy context, this concept illustrates how the Global North often initiates clean energy targets and transitions, while access to key technologies, funding, and supporting infrastructure remains dominated by those same countries. The European Union Deforestation Regulation (EUDR) is a concrete example of this tension, as it restricts CPO products from producing countries, which are predominantly in the Global South such as Indonesia. In response to this discriminatory regulation, it is appropriate for Indonesia to develop its CPO—rejected by the EU market—into biodiesel as an effort to achieve energy independence amid ongoing global structural tensions. Developing biodiesel can also enhance Indonesia’s bargaining power in energy diplomacy and negotiations.

2.2.2 *Energy Security*

Energy security has become an increasingly critical concept. This is tied to the fact that energy commodities are no longer seen merely as economic or production resources but have evolved into strategic assets. Countries that have achieved a degree of energy security are more resilient to disruptions in global energy supply. In *Energy: Economics, Politics, and Security* published in *International Security*, Deese (1979)[15] explains that energy security refers to a condition or phenomenon in which a country has a high probability of maintaining an adequate energy supply that is accessible to the population at affordable prices.

In the context of Indonesia, particularly during the Prabowo administration, energy security has become one of the cabinet’s main focuses. In his vision and mission, Prabowo frames energy security through the concept of “energy self-sufficiency,” with the development of biodiesel derived from Crude Palm Oil (CPO) as a key sector. In 2024, Indonesia was projected to spend around \$5.5 billion on diesel fuel imports, a figure vulnerable to fluctuations in global fuel prices due to political instability. As the world’s largest palm oil producer, Indonesia has abundant CPO reserves, producing approximately 48.164 million tons in 2024 (GAPKI, 2025)[16]. This shows the immense potential for Indonesia to process its CPO into biodiesel, reducing import dependence and ensuring biodiesel availability for national energy needs—thus truly achieving energy security.

2.2.3 *Energy Diplomacy*

The evolution of energy commodities into strategic assets has prompted a shift in how energy is used—not merely as a tradable commodity but also as an instrument to influence other actors in the international arena and secure national interests. Energy diplomacy in international relations is closely linked to foreign policy, with the aim of ensuring a country’s energy security while also promoting business and economic opportunities in related sectors (Kresnawan & Wijaya, 2021)[17]. It becomes clear that states, as actors in international interactions, have begun to use commodities such as energy to influence others, shape nation branding, and open economic opportunities. In the case of Indonesia and its biodiesel, the use of biodiesel is not just a domestic policy, but also a strategic move to influence perceptions that Indonesia is serious about a “green” energy transition and to strengthen its global position and bargaining power. With its biodiesel program, Indonesia is able to position itself among Global South countries not

only as a new player but potentially a leading one in the field of CPO-based biodiesel. This opens up the possibility for Indonesia to initiate bioenergy cooperation within the framework of South-South Cooperation. In its interactions with the Global North, Indonesia can use biodiesel as a bargaining tool and even as a new export commodity opportunity—particularly since more "environmentally friendly" energy sources tend to have a more positive image in Global North countries.

2.2.4. Conceptual Synthesis and Theoretical Framework

In the context of this study, the three concepts outlined above are functionally connected and help provide a deeper and more analytical understanding of the phenomena under investigation. North-South Tension serves as an external determining factor exerting pressure on Indonesia, particularly in relation to its CPO exports. In response to these external pressures, under the leadership of President Prabowo, Indonesia has opted to manage its national CPO resources by converting them into biodiesel. This initiative has been articulated in his vision and mission and translated into ministerial directives and regulations. Indonesia's response to external factors takes the form of domestic policy-making that simultaneously aims to enhance national energy security. In implementing this, Indonesia also adopts diplomatic approaches, whether in negotiating against CPO product restrictions or in pursuing international collaboration on biofuel development, particularly biodiesel.



Figure 2. Framework for Indonesia's Biodiesel Policy Strategy.

3. Methodology

3.1. Type and Approach

- This study uses a qualitative-descriptive (holistic) method, as it aims to understand biodiesel policy within the context of international relations.
- The approach is based on a main concept supported by auxiliary concepts. The main concept is North-South tension, while the supporting concepts are energy security and energy diplomacy.

3.2. Research Design

- The research uses a descriptive-analytical design, which means it seeks to describe Indonesia's biodiesel policy and analyze it through the relationship between variables. Policy analysis is applied to evaluate how Indonesia's biodiesel policy is formulated and implemented within the global context.

3.3. Data Collection Techniques

- This article draws on official government documents related to biodiesel, academic journal publications, recent news, and relevant reports from international organizations. A literature review technique is used to identify themes, patterns, and arguments in policy-related articles on biodiesel, in order to understand Indonesia's strategic approach.

3.2. Data Validation Technique

- Process tracing (or tracing model) is a qualitative technique used to uncover causal mechanisms: the "how" and "why" behind the formulation of a particular policy.
- Establishing Casual Mechanisms:
 - Output identification: The decision to raise the mandatory blend from B35 to B60 as an instrument of energy sovereignty.
 - Main hypothesis: Under the pressure of North–South tension, Indonesia utilizes biodiesel to strengthen its bargaining power in climate and energy negotiations.
- *North–South Tension* Framework
 - Context: Developed countries (North) are pushing for emission reductions, while developing countries (South) demand the right to development and sovereignty over natural resources.
 - Role of biodiesel: Seen as a negotiation tool. The availability of B60 reduces dependence on fossil fuel imports from developed nations, while also signaling Indonesia's climate commitment.
- Tracing Process
 - Indonesia leverages the G20 forum to promote biodiesel as a green energy solution and as part of South–South Cooperation.
 - Indonesia strengthens its narrative as a biodiesel pioneer within the Council of Palm Oil Producing Countries (CPOPC).
- Synthesis of Findings
 - By tracing each "link" in the mechanism—from framing North–South tension, to articulating energy security, and advancing energy diplomacy—the author reveals that:
 - Biodiesel policy is not merely an economic or environmental issue, but also a foreign policy instrument used to enhance Indonesia's bargaining position within the global North–South framework.
 - Process tracing uncovers the "black box" of diplomats and technocrats, ensuring each policy step is supported by empirical evidence from qualitative research and official documents.

4. Discussion

4.1 EU Discrimination on Crude Palm Oil and Indonesia's Biodiesel Response

In today's world, where global-scale issues concerning climate and the environment are increasingly prominent, energy development faces a complex dilemma involving environmental considerations. This situation often becomes a flashpoint in the ongoing tension between Global North countries, such as the European Union, which place a strong emphasis on environmental concerns, and Global South countries like Indonesia, which are still striving to advance their economic development. This tension is clearly reflected in the European Union's discriminatory treatment of palm oil (CPO) products from Indonesia. As a tropical country, Indonesia has highly favorable geographic conditions for palm oil plantations, making it the largest palm oil producer in the world. This prominence highlights the critical importance of the palm oil sector—not only in terms of national foreign exchange revenues but also for grassroots communities who rely on palm plantations for their daily livelihoods. However, the European Union, a prominent actor in global environmental advocacy and green energy transition, tends to view Indonesia's palm oil industry negatively. The EU argues that the industry significantly contributes to deforestation and land-use change, which in turn escalates carbon emissions and exacerbates global warming.

Under the justification of promoting sustainability and mitigating climate change, the European Union has introduced policies that are considered discriminatory, imposing restrictions on palm oil (CPO) products entering the European market. One such policy is the Renewable Energy Directive II (RED II). Through RED II, the EU classifies palm oil products as high-risk commodities for deforestation, due to what it labels as a high indirect land-use change (ILUC). Furthermore, RED II stipulates that by 2030, products such as biodiesel derived from palm oil will no longer be categorized as green energy (European Commission, 2019)[18]. This policy has severely impacted Indonesia's palm oil industry and carries the potential to result in job losses for many Indonesians. Such consequences run counter to the principles of a green energy transition that is inclusive and sustainable.

Indonesia views the European Union's policy as discriminatory and indicative of the structural imbalance between Global North and Global South countries. Through trade restrictions on palm oil (CPO) products, the European Union appears not only to be pursuing climate change mitigation but also to be engaging in protectionist efforts to favor other types of vegetable oils, such as soybean oil and sunflower oil, which are major commodities produced by EU member states. In response to this policy, Indonesia, together with Malaysia—the world's two largest CPO producers—lodged a formal complaint and expressed strong opposition by bringing the case to the World Trade Organization (WTO). In 2025, a WTO panel ruled that the European Union had indeed committed trade discrimination against Indonesia's palm oil products and upheld Indonesia's claim. The WTO also concluded that the European Union had failed to properly review and assess data related to land-use changes associated with palm oil cultivation. Furthermore, the panel found significant shortcomings in the formulation and implementation of criteria and procedures for certifying low ILUC-risk products under RED II (Kemenko RI, 2025)[19].

In the context of the North–South Tension concept, the European Union—as an actor in international relations that has long positioned itself as a leader in environmental regulation and policy—has, whether intentionally or not, imposed constraints on the economic development of developing countries. Environmental and sustainability issues within the palm oil (CPO) industry have been utilized by the European Union to restrict the entry of CPO commodities into the European market. However, other types of vegetable oils produced in Europe and the United States are not subject to similar regulations, even though these commodities also have significant ecological impacts and contribute to increased carbon emissions (Castanheira et al., 2015)[20]. This reality highlights that the moral standards set by developed countries are often used as instruments to weaken the position of developing nations. In the case of Indonesia, export restrictions on crude palm oil (CPO) are not merely a matter of national economic concern, but also an attempt to diminish Indonesia's image and that of palm oil as a key commodity for both Indonesia and other countries in the Global South. Such actions also narrow the space and opportunity for Indonesia to play an active role, and potentially emerge as a leader, in the global energy transition toward bio-based fuels. The development of biodiesel from CPO should be maximized by Indonesia as a strategic effort to reduce dependence on imported fossil fuels, limit the export of raw and semi-finished goods in favor of domestic processing, and ultimately strengthen Indonesia's national energy security.

4.2 Biodiesel as a Strategy for Energy Security and Self-Sufficiency under Prabowo

President Prabowo Subianto, through his *Asta Cita* vision and mission, clearly places energy security and self-sufficiency as one of the national strategic priorities during his term in office. Among the 17 priority programs, President Prabowo places special emphasis on the energy sector to ensure the resilience, independence, and self-sufficiency of Indonesia's energy system. This commitment is reflected in one of the programs: the development and mandatory use of biodiesel based on crude palm oil (CPO). The aspiration for energy security and self-sufficiency under Prabowo's leadership is rooted in the volatility of global energy prices and supply, which are frequently influenced by geopolitical tensions, conflicts, and rivalries among major powers. Indonesia, as a developing country, still heavily relies on the use of fossil fuels such as diesel. These fossil fuels are essential to support industrial needs and serve as the backbone of the country's logistics and transportation systems, including trucks, trains, buses, and ships. To avoid dependence on imported fossil fuels to meet national

needs, Indonesia views CPO-based biodiesel as a path toward achieving sustainable energy resilience and independence.

This perspective is supported by the annual report from the Ministry of Energy and Mineral Resources (ESDM) (2024)[21] In 2023, Indonesia imported 5.15 million kiloliters, or approximately 32.38 million barrels, of diesel fuel. This clearly indicates a continuing lack of self-sufficiency and highlights Indonesia's potential dependence in the energy sector. This condition does not reflect President Prabowo Subianto's vision of achieving energy resilience and self-sufficiency. Instead, it demonstrates that Indonesia's current position still does not align with the concept of energy security. According to this concept, a country—in this case, Indonesia—can be considered to have strong energy security if it possesses an adequate supply and level of energy, and if that energy is accessible to the public at an affordable price.

Indonesia's biodiesel program offers a viable solution to reduce the country's reliance on imported fossil fuels, especially diesel, and to progress toward energy security. This strategy is based on the fact that Indonesia is the world's largest producer of crude palm oil (CPO). According to data from GAPKI (2025), Indonesia was able to produce 48.164 million tons of CPO in 2024. This high production capacity shows that Indonesia has abundant raw materials for biodiesel. When properly processed, this supply can serve as a powerful strategy to reduce fossil fuel imports. So far, Indonesia has successfully adopted and marketed B30 and B35 blends (30 and 35% palm-based biodiesel, respectively). In line with this, the Ministry of Energy and Mineral Resources stated at the beginning of 2025 that Indonesia would begin transitioning to B40 during the year, following the national roadmap and aiming for B60 by 2027.

Table 1. Indonesia's Biodiesel Policy

Year	Biodiesel Policy	Related Regulations
2008	B2,5 - B7,5	<i>Peraturan Menteri ESDM No.32/2008 tentang Penyediaan, Pemanfaatan, dan Tata Niaga Biofuel</i>
2015	B10	<i>Peraturan Menteri ESDM No.12/2015 (perubahan ketiga dari Permen ESDM No.32/2008), Permen ESDM No.25/2013, Permen ESDM No.20/2014, Peraturan Pemerintah ESDM No.29/2015</i>
2016	B15	<i>Permen ESDM No. 20 Tahun 2014</i>
2018	B20	<i>Peraturan Presiden No.66/2018 tentang Dana Perkebunan Kelapa Sawit, Permen ESDM No. 12 Tahun 2015 Peraturan Pemerintah ESDM No.41/2018</i>
2020	B30	<i>Peraturan Menteri ESDM No. 12 Tahun 2015</i>
2020	B35	<i>Perpres 61/2015, 24/2016, 66/2018 Permen ESDM 12/2015</i>
2025	B40	<i>Permen ESDM No. 24/2021</i>
2026	B50	<i>Draft Permen ESDM No. 4/2025</i>
2027	B60	Planning

The table above illustrates the roadmap for Indonesia's biodiesel development and targets for the year 2027. Under the direction of President Prabowo, the Ministry of Energy and Mineral Resources has steered Indonesia's energy sector toward biodiesel development that does not stop at B35 or B40, but extends to B60 (Setiawan, 2024)[22].

Based on the data presented above, if Indonesia remains focused and committed to processing crude palm oil (CPO) into B40 biodiesel in accordance with the latest regulation from the Ministry of Energy and Mineral Resources, the country should have the potential to become "free" from diesel and solar fuel imports.

Table 2. Indonesia's B40 Biodiesel Production Potential

	Explanation
Indonesia Solar and Diesel Import	5,15 million kiloliters
Indonesia CPO Production	48,164 million ton CPO or 2,60 billion kiloliters (assuming the density of CPO = 0,89 kg/L)
Indonesia Biodiesel Production Potential	<p>With B40, Indonesia's potential imports of diesel and solar fuel can be reduced to only 3.09 million kiloliters based on calculations:</p> <p>$40\% \times 5,150,000 = 2,060,000$ kL (CPO)</p> <p>$60\% \times 5,150,000 = 2,060,000$ kL (Solar and Diesel)</p> <p>If the fuel used in producing B40 is domestically produced, then Indonesia can completely stop importing diesel and solar fuel.</p>

Through the calculations and data above, it has been shown how the biodiesel program is capable of promoting energy security and self-sufficiency in line with President Prabowo Subianto's vision and mission. The potential use of crude palm oil (CPO) does not only stop at diesel and solar fuels for vehicles but can also support Indonesia's electricity security through diesel power plants (PLTD) and bioavtur blending. So far, based on data from the Ministry of Energy and Mineral Resources (2022), the use of B30 in 2022 has successfully reduced the country's expenditure by saving \$4.54 billion in import costs. With the launch of the latest regulation for B40 use, Indonesia's foreign exchange savings could continue to increase, especially if Indonesia reaches the B60 target by 2027.

4.3 Biodiesel as an Instrument of Indonesia's Energy Diplomacy

Biodiesel today is no longer just an alternative energy commodity for palm oil (CPO) producing countries or other bio-products. Biofuel has now transformed into a strategic commodity because it offers an alternative solution to fossil fuels and serves as a greener and more sustainable energy source. Discussions about biofuel have also begun to become important topics for the international commodity market due to its benefits and as a solution to fluctuating fossil fuel prices (Dufey, et al, 2007)[23]. In the context of Energy Diplomacy, Indonesia has the opportunity to use biodiesel as an instrument to build Indonesia's bargaining power or leverage in the eyes of international actors and forums. With its large biodiesel production potential, Indonesia can strengthen strategic relations with both Southern and Northern countries because it has the potential to play a role as a global green energy producer, especially in bioenergy.

At the first meeting of the G20 Energy Transitions Working Group (ETWG) in 2019 in Tokyo, the Indonesian ETWG delegation promoted biodiesel in discussions related to Energy Security, renewable energy, and sustainability. In this meeting, Indonesia explained and presented the success and potential of biodiesel through the mandatory B20 program at that time. This initiative was a follow-up to the previous year's G20 energy meeting, where Indonesia succeeded in proposing biofuel development as green energy into a joint agreement among the energy ministers of G20 member countries (Kementerian ESDM, 2019)[24]. At the G20 Summit in Brazil in 2024, President Prabowo Subianto once again presented and promoted Indonesia's grand vision to achieve Net Zero Emission before 2050, with one of the efforts being the increased use of biodiesel both as vehicle fuel and as a power source through diesel power plants (PLTD) (Setkab RI, 2024).

Indonesia is also active in promoting and encouraging collective cooperation among Crude Palm Oil (CPO) producing countries to jointly develop biofuel. This effort can be seen through the invitation from Coordinating Minister Airlangga in the Council of Palm Oil Producing Countries (CPOPC) to strengthen cooperation and collaboration, including the development of biodiesel made from CPO because it is more sustainable and included in renewable energy (Kemenko RI, 2022)[25]. The development journey of Indonesian biodiesel up to the mandatory B40 shows Indonesia's seriousness in moving towards a sustainable and low-emission energy future. Indonesia must catch up in green energy innovation consistently

according to the biodiesel development roadmap, by increasing biodiesel production capacity through refinery construction, and shifting subsidies from fossil diesel and solar to Indonesian biodiesel in order to reduce dependency on external parties, especially in the energy sector. With the large domestic CPO production capacity, it is not impossible for Indonesia to become fully independent through biodiesel and even become a major exporter of biodiesel. This will certainly have implications for increasing Indonesia's bargaining power on the international stage. In this era, energy needs are increasingly crucial. Russia has shown how energy can become powerful leverage, where despite being subjected to many sanctions and pressure from the European Union due to its invasion of Ukraine, the EU still cannot fully give up Russian gas supplies as cheap energy (Rossbach, 2018)[26]. Similarly, Iran, despite economic sanctions, through its sale of crude oil with its "ghost fleet," is still able to carry out national development and military strengthening [27]. As the global "king" of CPO, Indonesia also indirectly has the potential as the main producer of biodiesel, which will automatically provide Indonesia with the ability to use energy, in this case biodiesel, as political leverage in the global political constellation.

5. Conclusion

Utilizing Indonesia's stock of Crude Palm Oil (CPO) as raw material for biodiesel production, especially amid the North-South tension between the European Union and Indonesia, is a wise step toward achieving energy self-sufficiency and energy security in line with President Prabowo's Asta Cita vision and mission. Indonesia's consistency in developing biodiesel according to the B60 target and roadmap for 2027 is an obligation to reduce the country's dependence on fossil fuel imports.

With the very large biodiesel production potential resulting from the high domestic CPO production capacity, Indonesia has the potential to play a crucial role as a green energy actor, particularly in the biodiesel commodity. This automatically enhances Indonesia's bargaining power in international relations. Through biodiesel, Indonesia can strengthen South-South cooperation within the context of energy diplomacy, especially with other palm oil producing countries.

Clear and well-formulated regulations to synergize existing national institutions are crucial aspects that President Prabowo must pay attention to, ensuring no overlapping duties and functions. Bureaucratic reforms and the establishment of an Energy Diplomacy Task Force can also be carried out to ensure Indonesia's bargaining power is strengthened on the international stage.

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The authors declare no conflict of interest in the writing of this research. This study was prepared objectively and neutrally, and therefore there are no conflicts of interest involved in its creation.

References

- [1]Abdurachman, B., & Mi'raz Prakoso, B. (2017). Peran Indonesia dalam kerjasama Selatan–Selatan dan triangular. Jurnal tanpa judul, 1(1).
- [2]Abidin, J. Z. (2023, Juli). Tata kelola industri kelapa sawit berkelanjutan dalam mendukung ketahanan energi nasional. *Journal of Agrosociology and Sustainability*, 1(1). <https://doi.org/10.61511/jassu.v1i1.2023.136>
- [3]Ayoob, M. (2002). Inequality and theorizing in international relations: The case for subaltern realism. *International Studies Review*, 4(3), 27–48. <https://doi.org/10.1111/1521-9488.00263>
- [4]Bosman, O., & Putra, R. D. (2024, Februari). Arah pembangunan energi terbarukan di Indonesia pada era presiden Joko Widodo. *Energy Justice*, 1(1), 51–64. <https://doi.org/10.61511/enjust.v1i1.2024.701>
- [5]Castanheira, É. G., Grisoli, R., Coelho, S., Anderi da Silva, G., & Freire, F. (2015, September). Life-cycle assessment of soybean-based biodiesel in Europe: Comparing grain, oil and biodiesel import from Brazil. *Journal of Cleaner Production*, 102, 188–201. <https://doi.org/10.1016/j.jclepro.2015.04.036>
- [6]Deese, D. A. (1979). Energy: Economics, politics, and security. *International Security*, 4(3), 140. <https://doi.org/10.2307/2626698>
- [7]Dufey, A., Vermeulen, S., & Vorley, B. (2007, November). Common Fund for Commodities Biofuels: Strategic choices for commodity dependent developing countries. www.common-fund.org
- [8]European Commission. (2019, Maret). Commission Delegated Regulation (EU) 2019/807 of 13 March 2019... (Peraturan).
- [9]Firdaus, R., & Wibowo, I. (2024, Juni). Tinjauan kritis atas visi dan misi Prabowo–Gibran tentang kerangka regulasi transisi energi hijau. *Jurnal Pro Natura*, 1(1), 19–39. <https://doi.org/10.1016/j.futures.2015.03.003>
- [10]Gabungan Industri Minyak Nabati Indonesia. (2019, 15 April). Eropa larang sawit RI, BPS: Neraca perdagangan kita masih bagus. GIMNI. (tidak dipublikasikan)
- [11]Gabungan Pengusaha Kelapa Sawit Indonesia. (2025, Maret). Produksi menurun, pasar Indonesia menyusut. (tidak dipublikasikan)
- [12]Hasan, W. H. (2023). Peluang dan tantangan teknis implementasi biodiesel dalam upaya peningkatan bauran energi terbarukan di Indonesia. (tidak dipublikasikan)
- [13]Jati, G. (2024, 6 Desember). IETO 2025: Status dan perkembangan transisi energi Indonesia. IESR.
- [14]Jungman, C., & Roth, D. (2025, April). The Ghost Armada. (publikasi tidak dikenal)
- [15]Kementerian Energi dan Sumber Daya Mineral Republik Indonesia. (2024). Statistik Migas Semester I 2024.
- [16]Kementerian Energi dan Sumber Daya Mineral Republik Indonesia. (2019, Juli). Pertemuan pertama G20 Energy Transitions Working Group. (laporan pertemuan)
- [17]Kementerian Koordinator Bidang Perekonomian Republik Indonesia. (2025, Januari). Menang di World Trade Organization, Menko Airlangga: Ini bukti bahwa negara Indonesia bisa fight dan kita bisa menang. (siaran pers)
- [18]Kementerian Koordinator Bidang Perekonomian Republik Indonesia. (2022, Maret). Accelerating clean energy transition and achieving net zero emissions with biodiesel policy. (dokumen kebijakan)
- [19]Kresnawan, M., & Wijaya, T. (n.d.). Energy diplomacy: A vital piece to boost renewable energy investment. ASEAN Centre for Energy. (tidak dipublikasikan)
- [20]Laia, K. (2024, 18 Januari). 90 % provinsi di Indonesia belum siap transisi energi. Betahita. (tidak dipublikasikan)
- [21]Permana, R. B., Juwana, H., & Afriansyah, A. (2024, September). Sustainable development as a legal argument for the Global South. *Indonesian Journal of Law and Society*, 5(2), 153. <https://doi.org/10.19184/ijls.v5i2.45427>
- [22]Pribadi, A. (2024, Maret). Pengembangan biodiesel di Indonesia beri manfaat nyata. (tidak dipublikasikan)
- [23]Rahmanulloh, A. (2019). Indonesia Biofuels Annual Report 2019. (tidak dipublikasikan)
- [24]Rossbach, N. H. (2018). The geopolitics of Russian energy gas, oil and the energy security of tomorrow. (tidak dipublikasikan)
- [25]Setiawan, V. (2024, 18 Oktober). Prabowo targetkan campuran biodiesel pada BBM bisa sampai B60. CNBC Indonesia. (artikel online)
- [26]Wardhana, A., & Marifatullah, W. (2020). Transisi Indonesia menuju energi terbarukan. Afkar. Diakses dari <http://tashwirulafkar.net/index.php/afkar/index>
- [27]World Energy Council. (2024). World Energy Trilemma Index 2024.