



PELITA

CHAPTER I

INTRODUCTION

1.1. Background

After securing his second term as President of Indonesia, Joko Widodo (Jokowi) made a promise of reforming the oil and gas industry of Indonesia focusing on cutting imports of Diesel and stepping up on the production of alternative diesel fuel known as Biodiesel¹.

The energy industry has always been a backbone for any economy if a country has an abundant amount of natural resources that could be utilized as energy, the country is considered energy-independent hence they do not have to depend on other countries export to supply their energy demands. In this era, most energy consumption is based on combustion technology and hence they need to use mineral fuel (fossil fuel). If they can export their mineral oil source, they have certain leverage because the energy demand will always be constant so long as there is little access to substitutes.

In international trade, members of OPEC countries have these leverages. OPEC countries have leverage in international trade because a lot of countries depend on them to supply their energy demands and this could lead to dependency. The most urgent problem is that dependency towards that particular

¹ (Anisatul Umah. 2019. *Berlaku 2020, B30 Bisa Selamatkan Devisa RI Rp 75 T!* 9 12. <https://www.cnbcindonesia.com/news/20191209192944-4-121652/berlaku-2020-b30-bisa-selamatkan-devisa-ri-rp-75-t>

energy source could leave a room for major price fluctuations if there is a disturbance in the global supply of mineral oil and their derivatives, the buying country has no choice but to follow the price change and this could affect their domestic economy negatively. An example of this would be the US' 1973 oil crisis. In 1973, The OPEC countries put an embargo on states that supported Israel on their war. The US was one of the countries that supported the Israeli military in the Yom Kippur War, as a result, OPEC member states put on an embargo which sees US' mineral oil price increase four-fold from a minimum of \$3 per barrel into more than \$12 per barrel². This then rippled through the economy making prices soaring high as all transportation costs increased, putting the economy into a stagnant state and inflation. The US oil crisis reflected exactly how oil/energy dependency could lead towards the helplessness of the country when faced with an economic embargo or any stimuli that result in the restriction of energy inflow towards the country.

On the other spectrum, countries that can control the flow of energy or in this case mineral oil, such as the member countries of OPEC, they do not face any significant threats for mineral oil demand, as substitutes are not widely used and technology transition could take decades as most technology nowadays require mineral fuel consumption³. However, there is increasing pressure and demand for a cleaner energy source as mineral fuel causes too much emission

²*Energy Crisis*. (n.d.). From American History: <https://americanhistory.si.edu/american-enterprise-exhibition/consumer-era/energy-crisis>

³ H. Ritchie & M. Roser, (n.d.). *Fossil Fuels*. From Ourworldindata.org: <https://ourworldindata.org/fossil-fuels>

and the threat of climate change⁴ has caused the incentive to use an eco-friendlier source of energy.

Indonesia is a country that is strategically located, they have abundant natural resources including oil reserves, wood, agriculture fisheries, etc. Despite having oil reserves⁵, Indonesia still does not have the capabilities or infrastructure to refine its crude petroleum, instead, they have to import most of their refined petroleum be it diesel or petrol, to be used domestically⁶. This creates a dependency for Indonesia to import oil from other countries to meet the demands.

This creates a new problem for Indonesia as Balance of Payment deficits keep increasing.⁷ Since most of the fuel imported in Indonesia is also being subsidized by the government as the number of demands for energy keeps increasing and the quota of oil subsidized also keeps increasing. One way for the government to deal with this situation is by cutting imports and shifting the production of some mineral oil namely diesel, domestically.

However, the current trend in the world is no longer using fossil fuels, major economies in the world are stepping up and transforming their conventional energy consumption into green energy consumption. *Green Energy* is both sustainable and renewable energy, with less emission compared to that of

⁴ H. Ritchie & M. Roser, (n.d.). *Fossil Fuels*. From Ourworldindata.org: <https://ourworldindata.org/fossil-fuels>

⁵ *Indonesia Oil Reserves*. (n.d.). From Statista: <https://www.statista.com/statistics/755082/indonesia-total-proven-oil-reserves/>

⁶ S. R. Sulaiman, (2018, 9 27). *Indonesia imports more fuel in 2018*. From Jakarta Post: <https://www.thejakartapost.com/news/2018/09/27/indonesia-imports-more-fuel-in-2018.html>

⁷ Anisatul Umah. 2019. *Berlaku 2020, B30 Bisa Selamatkan Devisa RI Rp 75 T!* 9 12. <https://www.cnbcindonesia.com/news/20191209192944-4-121652/berlaku-2020-b30-bisa-selamatkan-devisa-ri-rp-75-t>

conventional energy such as fossil fuels⁸. The urgency of this comes from the fear of climate change. Recent studies suggest that the earth is warming up and that global warming is mainly caused by tremendous amounts of emissions that are created by burning mineral fuels⁹.

Examples of energy alternatives include electric energy, plant-based diesel and petrol fuels, solar panels and many other forms. Different countries take different approaches in addressing this issue, they are transforming into a cleaner energy usage but the green energy varies from country to country depending on factors such as infrastructure, economic capabilities, resource availability and geographic location. Indonesia has a lot of potential in terms of renewable and sustainable energy¹⁰. Having a geographical advantage, we have the potential to utilize solar power, geothermal power, wind power and many more. Despite all this potential, most of all Indonesia's energy consumption comes from a non-renewable source¹¹.

When it comes to mineral oil substitutes, one of Indonesia's main agricultural commodities is a likely candidate. Crude Palm Oil and its derivatives (waste palm oil) have been the main component in the production of Biodiesel¹².

Biodiesel is one of the most attractive alternatives, as an energy source the

⁸ *Biofuels & Green House Emissions*. (n.d.). From energy.gov: <https://www.energy.gov/sites/prod/files/edg/media/BiofuelsMythVFact.pdf>

⁹ H. Ritchie & M. Roser, (n.d.). *Fossil Fuels*. From Ourworldindata.org: <https://ourworldindata.org/fossil-fuels>

¹⁰ K. Walton, (2019, 8 19). *Indonesia Should Put More Energy Into Renewable Power*. From lowyinstitute.org: <https://www.lowyinstitute.org/the-interpreter/indonesia-s-should-put-more-energy-renewable-power>

¹¹ K. Walton, *Indonesia Should Put More Energy Into Renewable Power*.

¹² B. Christina, (2019, 12 23). *Indonesia launches B30 biodiesel to cut costs, boost palm oil*. From Reuters.com: <https://www.reuters.com/article/us-indonesia-biodiesel/indonesia-launches-b30-biodiesel-to-cut-costs-boost-palm-oil-idUSKBN1YR0D2>

emission from consuming Biodiesel is up 50% less compared to that of mineral oil¹³, and the raw materials used could come from waste materials found in Palm Oil Mill factories or sewage filtration facilities recycling waste palm oil or used cooking oil¹⁴. Indonesia's capabilities for Biodiesel production is enormous, the global palm oil industry is reliant towards Indonesia and Malaysia for their palm oil-based products as more than 80% of all palm oils used globally are produced between the two countries¹⁵.

As of 2020, Indonesia already made efforts in integrating Biodiesel as part of their main fuel source, however, it was only limited to a certain percentage of blends between Biodiesel and mineral diesel. The President aims to increase the blend of Diesel and Biodiesel an additional 10% blend each year, right now Indonesia is already at a blend of B30 which translates to 30% Biodiesel and 70% Mineral diesel¹⁶. Indonesia aims to use 100% Biodiesel before 2024, Jokowi promised that he would make it his paramount objective to see that Indonesia becomes one of the largest producers of Biodiesel by 2024 and stop relying on diesel imports from other countries.¹⁷

One of the consequences of producing this energy source domestically is cutting diesel imports from other countries and limiting the export of the raw

¹³*Biofuels & Green House Emissions*. (n.d.). From energy.gov: <https://www.energy.gov/sites/prod/files/edg/media/BiofuelsMythVFact.pdf>

¹⁴*What is Biodiesel*. (n.d.). From Biodiesel.org: <https://www.biodiesel.org/what-is-biodiesel/biodiesel-basics>

¹⁵ *Palm Oil Industry In Indonesia*. (n.d.). From Indonesia-Invests: <https://www.indonesia-investments.com/business/commodities/palm-oil/item166>

¹⁶ B. Christina, (2019, 12 23). *Indonesia launches B30 biodiesel to cut costs, boost palm oil*. From Reuters.com: <https://www.reuters.com/article/us-indonesia-biodiesel/indonesia-launches-b30-biodiesel-to-cut-costs-boost-palm-oil-idUSKBN1YR0D2>

¹⁷ Christina. *Indonesia launches B30 biodiesel to cut costs*

materials for biodiesel production. From a trade perspective, this could be viewed as a protectionist approach and trading countries might respond reciprocally. Domestically in the short-run, it has the possibility of causing more harm than good from the transition of the current status quo of energy technology and energy supply. From an international politics perspective, Indonesia could be viewed as increasingly becoming more energy-independent which rearranges the geopolitical status quo. To achieve the goal of being energy-independent in the long run, it is paramount to establish a firm substitute for energy imports starting with the introduction of biodiesel. However, to be integrated into the Indonesian energy ecosystem and to have a smooth energy transition, highlighting the domestic challenges is of paramount importance.

1.2. Research Question

After presenting the premises that have been elaborated in the previous section, this thesis will answer the following research question:

“What are the challenges and hindrances of adopting Bioenergy during Jokowi’s second presidential term?”

1.3. Research Objective

This thesis aims to explain the challenges faced by Indonesia in adopting green energy as opposed to conventional energy source starting with the introduction of bio-diesel. Focusing more on both negative and positive changes and effects that it would have on the country's socio-economic condition and the leverage that it would give Indonesia on the international stage. This thesis will

seek threats for Indonesia is aiming to become more energy-independent as part of their national interests.

1.4. Significance of Research

The findings of this thesis would provide insight towards International relations scholars or scholars from any discipline, about the importance of being energy independent. It also highlights how managing a specific sector within the economy could have rippling effects on the whole economy. The research will first identify the domestic(internal) transformation Indonesia would be necessary and provide insights on how important to have all the actors especially the government to support this economic transformation, to provide the right legal framework and economic incentives via policy. Then the research will highlight the risks associated with the transformation. And finally, the study will provide insights about the role Indonesia ought to have at the national level and the international level as bilateral and multilateral relations with other countries are expected to change.

1.5. Structure of Writing

The first chapter explains about the introduction, the chapter offers overview of the overall thesis, which includes an introduction towards energy security which is the background of the topic, research question, objectives and significances of the study itself.

Second Chapter explains the theoretical framework, during this chapter the international relations theories which revolves around the realist theory and

concepts of energy security and Indonesia's interest in bioenergy is being elaborated. This chapter discusses peer-reviewed literature that serves as the basis of the study

The third chapter explains the methodology used in the study. The chapter explains the research approach, research method and data collection apparatus that is carried for this thesis. The chapter also delivers data analysis technique used in data collection to answer the research question.

The fourth chapter which is the analysis, is the main body of the thesis. This chapter analyzes all contributing variables and presents all the data gathered regarding the current framework of energy that Indonesia has, getting the big picture of the consumption rate. Then analyzing the climate in Indonesia for Biofuel production in order to achieve energy security. The analysis conducted in this section uses information obtained through various government reports and expert interview. The analysis conducted in this chapter would be used to answer the research question of the thesis.

The fifth chapter which is the conclusion, provides the conclusion of the thesis, in which the conclusion of the analysis conducted in chapter IV which would give the answer of major hindrances as well as challenges for adopting bioenergy in Indonesia