CHAPTER I

INTRODUCTION

A. BACKGROUND

Renewable energy and its development have been a prominent issue in the discussion of international relation, especially throughout the 21st century. As the world entangled with the raising concern of the use of the non-renewable energy as well as the concern of the climatology crisis, people have sought an alternative from the usage of conventional fossil fuels and ensure sustainable energy practices. This period of time introduces a dynamic exchange of technological advancement, environmental awareness, and shifting energy policies that laid the framework for the renewable energy revolution that continues to shape the energy politics in the 21st century.

The importance of renewable energy as an alternative from the conventional fossil fuel energy have resulted in several important move and shift around the globe. Many countries have started the development of renewable energy with various pace across the globe. In this thesis I will present the renewable energy development energy in Indonesia, specifically in through the lens of international relations and how the renewable energy industry in Indonesia come to be established. In the formulation of this thesis, I will engange will Indonesia's renewable energy global commitment, as well as it's development nationally. Furthermore, this thesis will provide an overview in terms of the role of foreign investor in the development of renewable energy in Indonesia.

The discussion of enegy concern and shifting towards renewable energy have been existed since the late 90's, when the Kyoto Protocols was constituted and arranged in 1997. This conference marked as the first international conference and legal

instrument that contains a legally binding pact as a global commitment to reduce global greenhouse gas emissions in order to avoid the threat of climate change. However, the implementation of the global commitment from The Kyoto Protocols only come into fruition in 2005, in which the parties have demonstrated the progress to their commitment. Unfortunately, the protocol does not impose any sanction or any specified criteria for not fulfilling the commitment of the agreement, nor that it has any follow up assessment from each members commitment towards the agreement (Yamin, 1998).

Another significant conference that plays a crucial role in regards to the development of renewable energy is the Paris Agreement. The Paris Agreement adopted in 2015 at the 21st Conference of Parties (COP21) to the United Nations Framework Convention on Climate Change (UNFCC) marked as another pivotal point to address the climate change issue. Unlike the Kyoto Protocols, Paris Agreement is more inclusive and flexible in its implementation. Paris Agreement was signed by almost every nation of the planet, approximately 196 state contributes to the agreement except Syria and Nicaragua. The central objective of the Paris Agreement is strengthening the global response to the threat of climate change, by keeping the increase of global temperature bellow 2 ° C above the pre-industrial levels, and aiming to reduce the increase of global temperature by 1.5°C above pre-industrial levels.

In achieving this target, each party members are required to employ each of their own mitigation strategies, these mitigation strategies are constituted in their NDC (Nationally Determined Contributions), the NDC's are used as the guide in development of the new commitments to address the climate change issues. The use NDC's are expected to strengthen the commitment overtime (Peterman et al., 2019). One of the most prominent provisions of each state NDC's is the implementation and the development of renewable energy. The potential for the utilization of renewable

energy is highly beneficial in combating the climate change since it is obtained without the expense of significant numbers of carbon emission. The use of renewable energy includes solar energy, hydropower, wind, tidal, thermal energy, as well as biomass energy (Teske, 2019).

Indonesia is one of the states that contributes in Paris Agreement, and played a significant role in contributing to the commitment in combating the global climate change issues. As of 2022, in its NDC's Indonesia still holds the commitment to unconditionally reduce the carbon emission by 29%, followed by a conditional reduction up to 41% by 2030. Many considered this as a very optimistic commitment, up to 97% parts of this commitment will come from forestry and energy sector. In energy sector Indonesia have committed to put forwards a mix energy policy, the policy includes the implementation of renewable energy at least 23% and at least 31% in 2050; oil should be less than 25% in 2025 and less than 20% in 2050; coal should be less than 30% in 2025 and less than 25% in 2050; gas should be less than 22% in 2025 and less than 24% in 2050 (UNFCC, 2022).

Among the contributing nation states in the Paris Agreement, Indonesia have engaged in an extensive energy cooperation with several key states in the conference, one of them includes United States. The renewable energy development cooperation between Indonesia have come into fruition from the development in renewable energy sector through private firms. One of the first private firms that manage to engage in the development of renewable energy in Indonesia is UPC Renewables. UPC Renewables is a US-based renewable energy developer with more than 20 years of experience in the design, construction, and management of top-tier wind and solar projects. With a development pipeline of more than 5,000 MW, UPC has created more over 3,500 MW of operational wind and solar projects with an investment value of over USD5 billion.

With cutting-edge technology and innovative local business tactics, UPC has a track record of being an early entrant in new markets and assisting nations in accelerating the development of renewable energy sources.

In Indonesia itself UPC Renewables has established themselves under the name of PT UPC Sidrap Bayu Energi. The power purchase agreement (PPA) for the Sidrap 70Megawatt (MW) Wind Project in Sidrap, South Sulawesi, Indonesia, has been signed by PT UPC Sidrap Bayu Energi, a joint venture project firm comprising PT Binatek Energi Terbarukan, UPC Renewables Indonesia, and SunEdison.

The agreement is also a component of a 300MW MoU (Memorandum of Understanding) that UPC Renewables Indonesia and the South Sulawesi Governor signed in October 2014. 28 utility-scale wind turbine generators with a 2.5 MW capacity will be used for the project. When it is finished, this project will be Indonesia's biggest wind project. By substituting fossil fuel, the Sidrap windfarm project will save the equivalent of 170,000 tons of carbon dioxide annually for an expenditure of US$180 million (PRNewswire, 2015).

The project commenced in 2015 and in 2018 the wind farm project in Sidrap South Sulawesi is finally inaugurated by The President of Indonesia himself Joko Widodo. The inauguration of this project set it as the first windmill project in Indonesia and also the largest of its kind in Southeast Asia at that time. The electricity produced from the windfarm will be sold to state-owned electricity company PLN through a 30 year of contract and will be distributed to South Sulawesi, Southeast Sulawesi and West Sulawesi electrical network (Hajramurni A, 2018).

From the slight background overview above, in regards to the cooperation between Indonesia-US in the development of renewable energy in Indonesia through UPC Renewables as the private firms, author aims to deliver a foundation towards

building the thesis. Therefore, it will provide a significant base in order to understand the role of foreign investor in the development of renewable energy in Indonesia.

B. BOUNDARY AND PROBLEM FORMULATION

In constructing this thesis, author will limit the scope of the analysis from several aspects. The thesis will only analyze renewable energy development cooperation between United States and Indonesia ad two main state actors. Furthermore, in analyzing the foreign investor and private firms, author will only use UPC Renewables Indonesia as the variables of the thesis.

Based on the boundaries and limitations above, the authors formulate research question as follows:

1. How is role of foreign investor (UPC Renewables) in the development of renewable energy in Indonesia?
2. How is the strategy of foreign investor (UPC Renewables) in the development of renewable energy in Indonesia?
3. How is the impact of foreign investor (UPC Renewables) cooperation with Indonesian government towards the development of renewable energy Indonesia ?

C. RESEARCH OBJECTIVES AND BENEFITS

Based on the research problem described above, the objectives of this study are:

1. To undertand how is the strategy of UPC Renewables in the development of renewable energy in Indonesia
2. To understand the role of UPC Renewables in the development of renewable energy in Indonesia

3. To understand the impact of UPC Renewables cooperation with Indonesian government towards the development of renewable energy Indonesia

Based on the objective above this research is expected to have the following benefits:

1. As a contribution to the study of International Relations, especially regarding the role of UPC Renewables in the development of renewable energy in Indonesia.
2. As a reference for stakeholders and related parties in formulating policies, especially in terms of renewable energy development in Indonesia.

One of the references for academics and the public to broaden their horizons on studies on renewable energy development in Indonesia.

D. CONCEPTUAL FRAMEWORK

In analyzing research on the strategy of UPC Renewables towards the development of renewable energy in Indonesia there will be a few concepts and theories needed in order to be a point of view on the problem being studied. This study will be using the concept of ecological modernization, energy diplomacy and multinational corporation.

1. Ecological Modernization

Ecological modernization is an approach that emphasize business and environmental perspective in order to establish an ecological protection through technological development, further improves the economic development and environmental protection. To put simply, it aims to prove that the world market

and the state actors can go hand in hand in order to improve the environmental protection in order to combat the climate change issue (Mol et al., 2013).

The theory of ecological modernization was first come to prominent during the promising environmental era in 1980's in response to the failure in resolving the pollution issue in 1960's and 1970's. This theory rooted from German words "*kologische Modernisierung"* initiated by two German political scientist Huber and Janicke. Ecological modernization is profoundly founded in the principles of preventive environmental policy and social market economy (Andersen & Massa, 2000).

Ecological modernization emphasize several provision that includes; economic and environmental variable can work synchronously resulting in a positive result for both; the second is that economic and environmental variable is a crucial aspect for the future generations to come; the third provision is sanctioning the polluters, also known as the "polluters pay" principle; fourth, there is the concept of a 'holistic' approach to problem solving, which rejects the notion that environmental problems can be solved individually; the fifth provision is that environmental issue needs to be solved with market considerations followed with government interventions; the final provision is that each states are required to adopt a sustainably ecological measures in their policy (Toke, 2011).

The ecological modernization method considers nature or the environment to be one of two domains threatened by the industrial system's dynamics, the other being the life world. Ecological modernization focuses primarily and entirely on the relationship between the technosystem and nature by focussing on the use of nature in industry. In other words, the key problems

of ecological modernization are natural resource depletion and environmental contamination in connection to the sustenance base (Spaargaren & Mol, 1992a).

Ecological modernization also viewed not only as a theory but a form political influence. In regards to renewable energy development, ecological modernization emphasizes that the importance of the environmental issue in overlapped by energy issues, this includes the concern towards the depletion of fossil fuel reserve, and global warming. Thus, renewable energy is viewed as the solution to the problem.

In understanding ecological modernization, it is crucial to identify its parameter and the limitation of its conceptual framework. Ecological modernization approach emphasizes to address several important parameters. Ecological sustainability and development cannot be achieved by considering ecological consideration as the absolute criteria of examination. There must be a synchronize step between ecological consideration, economic aspect of sustainability, and environment-induced social change(Spaargaren, 2000). One of the prime examples of the ecological modernization approach in the environmental foreign policy realm is the Paris agreement. The Paris Agreement recognizes that climate change is a global issue that necessitates international cooperation. It brings nearly all countries together to work toward a common objective of keeping global temperature rise well below 2 degrees Celsius above pre-industrial levels, with efforts to restrict it to 1.5 degrees Celsius. Each participating country presents its own Nationally Determined Contributions (NDCs), which outline precise commitments and strategies for lowering greenhouse gas emissions and responding to the effects of climate change. This approach supports the notion of national sovereignty while

pushing each country to accept responsibility for its own environmental impact. The Paris Agreement recognizes the importance of both mitigation (reducing greenhouse gas emissions) and adaptation (adjusting to the impacts of climate change). This balanced approach aligns with ecological modernization, which seeks to integrate environmental sustainability into economic development strategies (Liu et al., 2020). The agreement establishes a long-term aim of reaching a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases by the second part of this century. This demonstrates a commitment to a low-carbon and sustainable future, consistent with the ecological modernization principle of decoupling economic growth from environmental degradation. The agreement acknowledges the need for financial and technological support to help developing countries improve their capacity to mitigate and adapt to climate change. This support is consistent with the ecological modernization theory, which recognizes the role of technology transfer and financial assistance in promoting global sustainable development. Overall, the Paris agreement exemplifies ecological modernization approach in aligning economic development and environmental sustainability in a global scale.

Author considers ecological modernization theory suitable as the tool for the analysis of this thesis due to its focus on two domains, which is economy and environmental protection. The emphasis on the synchronization of these two variables will be helpful in analyzing the economic impact of the development of renewable energy and the environmental result of the project itself. It is also going hand in hand with the commitment in Indonesia's NDC's

to progressively shifting towards a more sustainable energy in order to overcome the global impact of climate change

2. Energy Diplomacy

The transition towards non-renewable energy to renewable energy has been globally developed in a significant pace throughout the globe. As the demand of renewable kept on rising, Indonesia as a state actors must take actions to secure the energy security which has been implemented by starting to developing and investing on renewable energy. Energy diplomacy concept will be used as a tool to dissect how Indonesian government regulate their cooperation regarding the development of renewable energy which involves various actors whether it is state or non-state actors. All of the actions that the government takes will later be considered as a diplomacy act in order to achieve their interest towards energy transition and maintaining energy security.

Energy diplomacy refers to government-connected international operations that aim to protect a country's energy security while simultaneously promoting business opportunities related to the energy industry, even though there is no precise meaning for the term (Griffiths, 2019a). Diplomacy is one of the most crucial instruments of foreign policy that can be used to advance a nation's energy objectives during a global energy transition and can be either bilateral or multilateral in nature. It will undoubtedly be necessary to coordinate the interests of various parties through multilateral diplomacy in order to transition the energy system on a big scale to one that is mostly based on clean energy. Global energy governance seeks to ensure on a global scale security of energy supply and demand, economic development, international security,

environmental sustainability, and domestic good governance. It is therefore perhaps the most crucial form of multilateral diplomacy for a large-scale energy system transformation (Van de Graaf & Colgan, 2016).

The diplomatic use of energy has two facets. One is the availability of energy resources and the nation's position in relation to international allies and the other is energy security. On the other side, it can be utilized as a diplomatic tool by influencing governments and politicians to further a foreign agenda.

Energy Transition

The provision of essential human necessities including food, water, and illumination depends heavily on energy resources. The modern world depends on resources for everything from agriculture to transportation. Protecting energy security, which is strongly linked to overall security and prosperity, is the goal of energy diplomacy. Clean energy from renewable sources is the major focus of energy diplomacy because of environmental issues and global warming.

Fossil fuels have dominated the world's energy mix for decades with little change. Fossil fuels' percentage of ultimate energy consumption decreased from over 85% in the early 1970s but has since stabilized at around 80% (Fattouh et al., 2018a). This scenario is starting to change, though, in large part because of the fast-lowering costs of renewable energy technologies and the rising public consciousness of the damaging effects of carbon dioxide emissions from the burning of fossil fuels. According to several definitions of "energy transition," changes in our energy and economic system will be defined by a shift from reliance on fossil fuels to a considerably larger reliance on renewable energy for the rest of this century. In addition to greater electrification and

digitalization across all energy sectors, this surge of renewable energy will also be accompanied by decentralization of energy supply.

It can be challenging to forecast the final scope and pace of the transition to a low-carbon energy system since so many socio-political variables must be taken into account. However, present trends indicate that by the middle of this century, renewable energy will significantly outnumber conventional energy sources in the power sector, along with significant improvements in the electrification of transportation. The fact that renewable energy, excluding large hydro, was responsible for 61% of new power generation capacity globally in 2017 and the fact that the yearly growth rate in electric passenger car sales stayed at over 60% per year from 2015 through 2018 are examples of the trend (IEA, 2019). Given these developments, Bloom- berg New Energy Finance (BNEF) forecasts that by 2050, renewable energy would generate around 64% of all electricity produced globally, with the amount of electricity produced itself rising by over 57% to 38,685 TWh (BNEF, 2017). IRENA (International Renewable Energy Agency) has made even more ambitious predictions, stating that by 2050, renewable energy sources must account for 85% of all energy generated worldwide, with solar and wind energy accounting for the majority of that proportion (IRENA, 2018).

The Impacts of energy transition towards geopolitics

A strong, sustainable global energy governance is necessary for the rapid and considerable proliferation of clean energy. The deployment of clean energy technologies, on the other hand, is more likely to be slowed down by weak global energy governance, particularly when it is coupled with international

political unrest (Scholten & Bosman, 2016). Geopolitics is therefore at the center of the energy transition. The following inherent qualities of renewable energy contribute to its geopolitical effects:

1) Abundant resources available to many countries, including the sun, wind, hydropower, biomass, geothermal, and ocean resources.
2) Intermittency of solar and wind energy, the two renewable energy sources that are expanding the fastest.
3) Instead of relying on centralized generations, there is potential for generational dispersal
4) Dependence on technologies created using materials like rare earth metals and minerals that are only found in a few locations across the world.

Based on these traits, power relationships between energy producers and consumers will change as energy markets increasingly are defined by the combination of resource abundance, energy independence, and electrical grid connectivity as opposed to the historical combination of resource scarcity and geographical concentration that necessitates the transportation of energy over long distances to end markets (O'Sullivan et al., 2017). Additionally, the rising significance of electricity as an energy carrier will make digitalization a crucial component of a low-carbon energy transition and give those nations with the most developed digital infrastructure even more leverage. In light of the anticipated geopolitical effects of a low-carbon energy transition, nations must be ready to modify their foreign policies to safeguard their own interests.

From the slight overview towards energy diplomacy above, it can be concluded that energy diplomacy has its own firm correlation with renewanble

energy. Energy diplomacy essentially requires the actors to ensure the the availability and sustainability of energy resources, and the other is to ensure the energy security by doing diplomatic acts to a related actors wether it's state actors or non-state actors.

Regarding the issue of this paper, Indonesian government is doing an energy diplomacy actions by developing a renewable energy project with a multinational corporation in this case UPC Renewables. This action is taken as an act of ensuring the availability of renewable energy for many years to come and also ensuring the national energy security of Indonesia.

3. Multinational Corporation (MNC)

Multinational Corporation theory will be the elaborating factors in order to understand the role of UPC itself as a non-state actor that is involved in the development of renewable energy in Indonesia. Multinational corporation theory will later show how Indonesian government collaborate with UPC Renewables in the development of renewable energy in Indonesia.

One of the most straightforward definitions is that MNCs are businesses that simultaneously control income-generating assets across multiple nations. An MNC would also include workers stationed all over the world, producing facilities in many nations on at least two continents, and financial interests dispersed all over the world, according to a more complex definition. Questions to be thought about include whether an MNC is privately held or can also be publicly owned by a government, as well as whether its forms and practices can either be particular to its home country or be global. The definition is altered by the replies (Chandler Jr & Mazlish, 2005)

MNCs are criticized by some. They contend that these businesses work to dominate markets, take advantage of both domestic and foreign labor, avoid paying taxes, skirt legal requirements, improperly manage innovation, and abuse their financial positions at the expense of other businesses. They point out that giant multinational corporations are particularly adept at using their market clout and political sway to consolidate their power and make obscene profits by taking activities that are against the general welfare. Some people hold MNCs in higher regard. Multinational corporations are said to be the pinnacle of contemporary capitalism, producing the advantages of economic life that many people take for granted.s

They contend that multinational corporations has a positive impact towards innovation and production, which raises living standards both domestically and internationally. Different perspectives on MNCs have an impact on government policy as well as how we comprehend how the economy works. Governments work with MNCs through contracts, taxes, and regulations. International investors place a high priority on diplomatic discussions, international treaties, commercial agreements, and even military actions. Tax breaks and other incentives are provided by governments to multinational corporations in an effort to draw and maintain their business. All of these relationships are predicated on differing perspectives about the nature of multinational corporations and their function in the modern economy (C Fritz & R Hines, 2021).

International Political Economy and the study of International Relations have both covered the subject of Multinational Corporations (MNC) before. As it had been working all over the world and had been mentioned in numerous

publications and studies. Regarding the emergence of MNC from Emerging Countries, there is a changing tendency, at least since ten years ago (Bachtiar, 2004).

The first multinational corporations (MNCs) of the modern era operated in the mining, oil, and agricultural industries, where production was closely tied to the land. When industrial capitalism first emerged in the nineteenth century, they were formed. Even though they are among the oldest global organizations, many mining and agricultural businesses have been in operation for more than a century. Particularly in the manufacturing industry, businesses expanded their global reach significantly throughout the second half of the 20th century (WAGI, 2018). This was partially done to get around trade and customs restrictions, which they did by establishing subsidiaries right in the middle of consumer markets. This was a tactic that European and Japanese automakers used when they set up assembly lines in the United States to gain access to the local market. However, internationalization specifically benefited from the opening-up of trade between states as part of the GATT (General Agreement on Tariffs and Trade) agreements and later the WTO (World Trade Organization). It also benefited from financial liberalization, which led to increased capital mobility, a decline in transportation costs, and the development of information technology and telecommunications.

Authors consider multinational corporation concept will be a suitable concept towards the papers issue, especially in order to study UPC Renewable itself as a multinatiobal corporation. The concept of multinational corporation will be helpful in understanding the strategy of UPC Renewable as a multinational corporation in developing renewable energy in Indonesia.

E. RESEARCH METHOD

1. Research Type

This research will use qualitative research methods. The qualitative research method was chosen because this method is considered appropriate for observing social phenomena in society, in this case in particular the science of international relations.

Qualitative research is used to explore, understand, and deeply interpret a social phenomenon from its origin. By using qualitative research, researchers can gather richer information and a more detailed picture of an issue, case, or event. By using qualitative research methods it will be easier to answer the why and how questions of a situation, not just what, where, and when.

Just like all scientific research, Qualitative Research is a method that seeks answers to questions and involves the collection of evidence. To collect data, qualitative researchers use a wide range of techniques such as in-depth qualitative interviews; participant and non-participant observation; field notes; focus groups; document analysis, and several other methods of data collection. There are also a variety of methodological approaches available to collect and analyze qualitative data such as phenomenology; ethnography; grounded theory; ethical inquiries; case studies; discourse analysis and more.

Furthermore, alongside the qualitative research type, this research will be using case study models, case study models are chosen because this research will be analyzing the role of UPC Renewables as an actor of foreign investor in the development of renewable energy in Indonesia, more specifically in the windfarm project located at Sidrap, South Sulawesi. case study will be suitable

in providing more information about the phenomena that has mentioned above, the information will be accurate and has a wide range of scope, therefore, the researcher will be able to deliver the result of the research effectively and easily.

2. Data Collection Technique

The data collection technique used in this thesis is library research, document study, and Interview. Library research means that any data obtained is sourced from secondary data from books, journals, newspapers, magazines, and the internet that provide relevant information and are by the themes and issues discussed. Interview is a data collection method that will provide us with a primary information towards the issue due to the source of the information comes from trustable source person that's involved directly to the issue. Meanwhile document study is a data collection method from the trustable document that is related to the issue, the document can be in a various format wether it's a written document, picture, or electronical source document.

In regards to the interview with the related actors from the industry, the interview will be done with The Head of Project Development Division of UPC Renewables, Mr Niko Priyambada. The interview with Mr Niko will revolve around several key questions in regards to the project development and general overview of UPC Renewables activities in Indonesia.

CHAPTER II

LITERATURE REVIEW

1. Ecological Modernization

Ecological Modernization originated from the rising concern of the environmental degradation and the importance of sustainable energy development. Ecological modernization represents a paradigmatic shift in terms of economic growth, technological development, and the protection of environment. Ecological Modernization theorist argues that the environmental issue is strongly connected with the pathway through modernization and there's no way of separating both aspects. The ongoing environmental degradation requires a major cultural, political and economic alteration as its solution (Spaargaren & Mol, 1992b).

In order to understand better about the emergence of the ecological modernization, it is crucial to understand the context of its emergence and the global political situation prior to the emergence of the ecological modernization. Ecological modernization is a social theory that emerges during the era of "environmental optimism" in the 70's and the 80's. However, during 1970's the emerging concern of environmental issues was undermined by the economic crises and rescession in late 70's. Due to this economical concern, environmental activist was trying to keep the credibility of environmental discussion by incorporating economic restructuring followed with environmental care. Afterwards, there was also an increasing concern of the need of the professionalization in the environmentalist discourse, this means that the radical form of environmental activism was slowly eradicating the

advancement and the justification of environmental movement as social change. Therefore, the shift to a professionalized form of environmental discourse is viewed as an alternative to the unprogressive mass demonstration. Backrground that leads to the initiation of the ecological modernization is the increasing awareness of the politically influenced environmental issues such as acid rain and ozon layer degradation, the environmental discourse is slowly changing to the portrayal of imminent threats in order to gain political influence from the public. It simply a symbolic display of the future threats that the vast industrialization poses to the mass public, rather than campaigning the corrupted nature of the industrial system. All of this changes in the social environmental discourse eventually leads to the initiation of an alternative theory accommodate all of this concerns. Therefore, ecological modernization emerged as a pragmatic solution that addresses the dynamic nature of environmental discourse with economic considerations (Hajer, 1997).

All of the social situations above eventually lead to the initiation of the ecological modernization in the early 1980's. The concept on ecological modernization was developed by many scholars in discussions. However, one of the earliest in the discussion is Jason Huber, Martin Janicke, alongside with several notable social scientist from United Kingdom (UK), Netherland, and Germany, such as Marten Haajer, and Arthur P.J Mol. Each of these scholars carries their own substantial contributions to the discussion (Mol & Sonnenfeld, 2000). For instance, since Jason Huber translated the heavily cultural frame of ecological modernization into a perspective of social scientific theory. In engaging to his analysis, Huber elaborate the theory with the metaphorical explanation, using the analogy of ugly caterpillar as the perverted industrial

system and comparing it with beautiful butterfly as the analogy of the ecological transformation, this metaphorical elaboration addreses the evergoing evolving modernization of environmental issues alongside with economic development concern. In addition to that, Huber presents three stages of social growth 1) Industrial take off; 2) industrial societies construction; 3) ecological transition towards new phase of superindustrialization. In this case, science is viewed as a crucial variable that progressively contributes to this evolving process (McLaughlin, 2012).

Since its initial emergence, ecological modernization oftenly becomes a crucial theory in the environmental discussion. In order to understand ecological modernization as a theory, author will elaborate first its implication in general terms. Essentially, ecological modernization emphasizes the shifting ideology that addresses economic concern amongst the environmental preservation concern. In addition to that, ecological modernization also emphasizes the importance of technological development in order to make economic development and environmental preservation synchronize one another. Ecological modernization has to be understood under the lens of modernization at first, by understanding the modernization foundation of the ecological modernization theory, we will further understand the theory's implementation and its importance towards the thesis issue (Seippel, 2000).

Modernization concept is essentially identifying those variables that leads to a progressive movement in the society. To simply put, it is a progressive process taking place in the world, in a certain point of time. The value of modernization initially emerged in Europe in 1970's but gradually spread around the globe. Under the paradigm of modernization, one has to be optimistic

that transformation is possible, and indeed it is (Alexander & Sztompka, 2002). The idea of modernization weighs heavily on to variables, one from what is left behind (traditional value and process) and the other is from what is acquired through the progress, the emerging modernity (Seippel, 2000).

Understanding the modernization value in the ecological modernization theory will help to shed the lights on environmental progression and sustainable development as a modernizing process. The "modernization" terminology in the ecological modernization is highly justified since it fulfills the criteria of modernization paradigm. Ecological modernization possesses an optimistic believe in terms of economic and environmental synchronizations a modernization factors, followed with the advance of science and technology. In addition to that ecological modernization also embodies the empirical shift that is necessary in the conceptual framework of modernization. From the lens of ecological modernization, it emphasizes the empirical shift in social approaches to ecological issues. Consequently, ecological modernization has also managed to brought the spotlight towards the necessity of comprehensive measure to deal with environmental and economic dilemma (Seippel, 2000).

In relation to the topic of the thesis, ecological modernization theory holds a significant role in understanding the role of each actor and how their actions affect one another. In regards to the climate change prevention, ecological modernization theory in necessary in comprehending the policing process of the whole global environmental movement. It is a sufficient conceptual framework to analyze the role of each actors involved, and review their actions towards achieving the best environmental outcomes (Howes et al., 2010). Ecological modernization views several crucial actors in the

environmental issues discussion which mainly separate into two categories; state actor; and non-state actors (non-governmental organization, transnational corporation, civil society organizations, etc). In regards to the relation between state actors and non-state actors in engaging to environmental actions, ecological modernization argued that relationship between economic activity alongside with sufficient technology followed with the engagement of state actors and non-state actors is necessary to achieve a maximum output of environmental results (Huber, 2009). In this case state actor holds a significant role as a legal keeper to the uncertain nature of the market as well as regulating and effective environmental policy ("Ecological Modernization: Theory and the Policy Process," n.d.).

2. Energy Diplomacy

Diplomacy is one of the most central instruments in the practice of international relations and global politics. It is the art of negotiating and dialoguing amongst nations in order to resolve issues, reach agreements, and encourage cooperation. Diplomacy has an important role in maintaining international peace and stability by developing understanding and establishing common ground on a variety of problems such as commerce, security, and human rights. Diplomacy focusses on the external matter of the states, thus international relations and politics (Thierry, 2019).

Diplomacy has been employed for a variety of foreign policy objectives in global politics. In this thesis, the writers will use one diplomatic term, energy diplomacy, to analyze and monitor the engagement of renewable energy discussion and policy. Specifically, authors will explore how energy diplomacy

can contribute to sustainable development and international cooperation. By examining the role of energy diplomacy in renewable energy discussions and policies, the writers aim to shed light on its potential to address global challenges such as climate change and energy security. Furthermore, this analysis will provide insights into the effectiveness of diplomatic efforts in promoting sustainable development and fostering collaboration among nations.

The use of energy as a diplomatic tool may be traced back to the early late nineteenth century to the early twentieth century, when the first ever industrialized oil production was introduced in the world by the American Petroleum Industry, which originated in Mesopotamia. It was then followed by the discovery of massive oil reserve in the Caspian Sea region by Russia. At that time the Russian government maintained an open policy towards their oil production, allowing foreign investor such as Swedish nobel family and The British Rothschild Brothers Group. Since then, competition and cooperation among states in oil production and exports has intensified, introducing energy diplomacy (Wang et al., 2022).

The prominence of energy diplomacy once again raised during the event the global oil crisis when OPEC imposed an oil embargo on countries that supported Israel in the Yom Kippur War. This event highlighted the need for diplomatic negotiations and cooperation in ensuring stable energy supplies and avoiding future crises. Additionally, energy diplomacy has evolved over the years to include discussions on renewable energy sources and technologies, reflecting the growing importance of addressing climate change and transitioning towards sustainable energy systems. Since then, energy diplomacy have been used to refer every diplomatic action between states using the

instrument of energy as the tool for cooperation and negotiation (Abelson, 1976).

As the development of energy security and preservation keeps on increasing, so does the discussion of energy diplomacy. Particularly in the 21st century, people have realized that the global energy mix have been dominated with not much of a change (Fattouh et al., 2018). Following the emerging concern of climate change threats and the development of renewable energy, also known as the time of global energy transition, energy diplomacy has once again become a central topic of discussion. Since many countries are considering dismantling their dependence on conventional fossil fuels and their destructive environmental impacts.

Energy diplomacy has once again become central to the discussion of renewable energy development and the global energy transition. In any form of energy diplomacy, it can be either bilateral or multilateral. Following the global transition towards more sustainable and renewable energy, the national interests of each of the involved states must also be aligned. In order to align the interests of each party, energy diplomacy is crucial in terms of global energy governance. By establishing sufficient diplomacy towards global energy governance, the pathway towards the global energy transition can eventually ensure the global scarcity of energy security, economic development, environmental sustainability, and domestic governance of each involving state (Griffiths, 2019).

The primary units of analysis in the conception of energy diplomacy are the state actors. In this case, the state actors act upon using energy policy in order to secure access to energy supplies and promote cooperation in energy

sector. The main conception of energy diplomacy does not solely rely on the assumption of business opportunities but it lies on the securing national energy goals. Therefore, the foundation of cost-benefits calculation of energy diplomacy is not to fulfill economic interest but rather a political one (Goldthau, 2010). Energy diplomacy concept behold three crucial norms, including energy security, competition, and sustainability . These norms ensure that countries can rely on a stable and secure energy supply, promote fair competition in the energy market, and prioritize the long-term sustainability of energy resources and practices. Energy security is essential for countries to ensure a stable and uninterrupted supply of energy, reducing vulnerability to disruptions or price fluctuations. Competition in the energy market fosters efficiency, innovation, and affordability, benefiting both producers and consumers. Lastly, sustainability focuses on the responsible use of energy resources, minimizing environmental impact and addressing climate change concerns. By adhering to these norms, countries can effectively navigate the complex landscape of energy diplomacy and achieve their national energy goals (Chaban & Knodt, 2015a).

Energy diplomacy thus plays a crucial role in examining global politics and promoting international cooperation. It involves negotiations, agreements, and collaborations between countries to ensure a stable and secure energy supply for economic development and national security. Additionally, energy diplomacy also helps in addressing geopolitical tensions and conflicts related to energy resources, promoting peace and stability in the international arena.

3. Multinational Corporation (MNC)

For a long time, the concept of multinational corporations has been discussed in the context of international relations. In the structure of international relations and global politics, multinational corporations address non-state entities. Multinational firms, at their core, are corporations that own and control economic and business activity across international borders (Buckley, 2018a). Furthermore, some scholars characterize multinational firms using a variety of characteristics, the criteria of which may include three main criteria: the first is their performance, which is having foreign sales and earnings, foreign assets, and members of foreign employees; the second is their degree of structural internationalization, which means that the firm operates in a member country and has a global presence through subsidiaries, branches, or joint ventures; and the third is the behavioral criteria, which means the management personnel think internationally about strategic opportunities and are willing to take risks in pursuing global expansion. These characteristics highlight the complexity and diversity of multinational firms, as they navigate different markets, cultures, and regulations. Understanding these criteria is crucial for analyzing the impact and influence of multinational firms on the global economy and their role in shaping international business dynamics (Aggarwal et al., 2011).

Multinational corporation have been existed in history for a long period of time, many scholars have divided opinions of where the early history of multinational enterprises might have started. Some argue that the earliest records of multinational corporations can be traced back to ancient civilizations such as the Sumerian civilization can be traced back to the 2500 BC. The

Sumerian civilization was known for its advanced trade networks and the establishment of long-distance trade routes (Wilkins, 1970). These trade routes allowed for the exchange of goods and resources between different regions, laying the foundation for early forms of multinational business operations.

Others believe that the origins of modern-day multinational corporations can be traced back to the English and Dutch East India Company, which was established in 1602. This company was one of the first to have a global presence and engage in international trade across different continents. Records have shown that these companies have been engaging in trading transactions between Batavia (present-day Jakarta) and their central office in Dutch East India, resulting in a significant volume of transactions. Not to mention their intra-Asian trade covering transactions in Japan, India, and the Middle East, as well as their transactions on the European continent. This large amount of transactions also followed with the management of the corporation being separated into hierarchical systems, further emphasizing the characteristics of modern-day multinational corporations (Carlos & Nicholas, 1988). These hierarchical systems allowed for efficient coordination and control of the various trading activities across different regions. Additionally, the success of these companies in managing such a vast network of transactions laid the foundation for the development of modern-day multinational corporations, which continue to operate on a global scale with complex supply chains and diverse business operations.

In the study of international relation, multinational corporation concept have been extensively used to analyze the complex interactions between states, non-state actors, and the global economy. Multinational corporations (MNCs)

are seen as influential players in shaping global politics and economics due to their ability to operate across borders, access resources globally, and influence national policies. They are often studied to understand their impact on host countries' economies, labor practices, environmental sustainability, and overall development. Additionally, MNCs' role in promoting or hindering international cooperation and conflict resolution is also a key area of research in the field of international relations. Throughout the history, multinational corporation have been used in terms of empirical and conceptual work. Therefore in some scholarly research, people have been encouraging of higher level of empirical and theoretical approach in terms of the utilization of multinational corporation theory. Initially, multinational corporation concept often use as the tool to understand and analyze multinational corporation phenomena. Generally, scholars would emphasize the use of multinational corporation to analyze issues such as cross-boundaries multinational firm, organizational structure of multinational enterprise, joint venture scheme, international collaboration and alliances (Holm et al., 1996). Other scholars also use the concept of multinational corporation to discuss issues related to cross-national decision making such as Foreign Direct Invesment (FDI), Internationalization, and global diversification (Hitt et al., 1997).

Furthermore, it is critical to understand the characteristic of the organizational structure that exist in the multinational corporation itself. The organizational structure of multinational corporations may vary throughout regions and origins. This variation is the result of the institution’s compatibility with their own task, technologies, relevant conditions, and working environment (Lawrence & Lorsch, 1969). In regards to the organizational

structure of multinational corporation, therea are five crucial structural characteristics to understand namely; organizational orientation; structural relation between center and outer units; the centralization of the organization; procedures and regulations; and the flexibility in the organization body (Schollhammer, 1972).

1. Organizational Orientation

   In terms of the organizational orientation, multinational corporations are distinct into two categories, international division and global corporation concepts. International division concept occurs when the organization emphasize the division of its international and domestic activities. The main objective of this concept is to identify international opportunities, control activity overseas and provide structural connection between central and other section of organization. Meanwhile, on the contrary global corporation concept eradicates all domestic-international separation, thus disregarding national boundaries. The global corporation concept does not divide the managerial role into regional division, but rather the division manager is given a global and worldwide responsibilities. Therefore, the top-level management of the organization must think in a global commitment framework.

2. Headquarter and Unit Relations

   An efficient and effective organizational execution in multinational corporation relies on how they manage organization

strategies from headquarters to the foreign operating subsidiaries. In terms of the relationship form between subsidiaries management and their executive in the headquarters, the relationship can be separate into two categories; single reporting relation; and multiple reporting relation. Single reporting relation is when the managing subsidiaries report and receive responsibilities from one corporate executive only. Meanwhile, multiple reporting relation is when a managing subsidiary receive and report their responsibilities to multiple corporate executives.

3. Centralization Pattern

Another important variable to consider in regards to the organizational structure of multinational corporation is the concentration and the distribution of authority in the body of the organization. In other words, is how authority and responsibility is appointed to the lower structure. The centralization and the decentralization of autonomy varies around multinational corporations around the globe. There are no specific division in terms of how centralized the autonomy in one multinational corporation. However, studies have shown that several regions have its own characteristic of autonomy distribution. For example, multinational enterprise in the USA tends to be more decentralized compared to multinational enterprise in Europe.

4. Procedural and Communication

Information flows and it's standardization through procedures is a crucial part from the operational and organizational structure of multinational corporations (Merton, 1968). Determining an effective rules and regulations in decision making relies heavily on the degree of information flow and communications in the body of an organization. In regards to this issue, there are no categorization of how each organization might implement the standard of their information flow. However, the extent of standardization can be seen in the frequency of the standardized from subsidiaries to the headquarters. For example, from a studies taking sample from US-based and Europe-based company, they found out that on average US-based companies send around 18 standardized reports from subsidiaries to central compared to the Europe-based companies in around 12 reports per month, this goes to show that to some extent US-based companies is more formalized in terms of the procedure standardization and their information flow.

5. Organizational Flexibility

Multinational corporation is very dynamic in nature, considering its heterogenous characteristic. Therefore, it is important to analyze the impact of their organizational flexibility and adaptability towards their operational effectiveness. Although there is not any specific characterization towards this variable, scholars have concluded that changes and flexibility that occurs in

> multinational organization and corporation is not the result of a planned structure, but rather most of the time is an indirect result of a substantial growth of the organization itself.

Multinational corporation operates in a nature of diverse environment, this aspect can include nationality, ethnic identity, and cultural diversity, all of these variables intertwined into such dynamics that allows scholars to expand further analysis towards the generalizability nature of the MNC itself. In the expansion of the empirical theory of multinational corporation, scholars have found that the theory can be expanded to analyze several phenomena, including; Contextual heterogeneity, in this case studies have found that multinational corporation concept capable in increasing the heterogeneity or complexity amongst group of people. Especially in terms of multinational corporation effects towards intraorganizational collaboration. The multinational corporation's political and social environment at the time both limited and opened up possibilities for collaboration. This circumstance gave the organization with the opportunity and created the need for collaboration and innovation. Furthermore, in terms of heterogeneity and complexity, scholars also found and effect of multinational corporation in increasing opportunity of theory and research variability at individual level. Scholars have found out that the variation individual values and beliefs effects to a certain extent on the systemic productivity of the firm. One study has shown that the heterogeneity of the social environment in the multinational corporation triggers some levels of creative behaviors (Roth, 2003).

4. Previous Research

In this section author will provide several previous research related to the issue in order to find comparison and further to help to inspire this thesis analysis. The following is several previous researches related to the topis of the thesis author have gathered.

1) Pambudi, N. A., Firdaus, R. A., Rizkiana, R., Ulfa, D. K., Salsabila, M. S., Suharno, S., & Sukatiman, S. (2023). Renewable Energy in Indonesia: Current Status, Potential, and Future Development.

Indonesia stands at a crossroads in its energy development trajectory, grappling with the challenge of meeting its growing energy demands while transitioning to a more sustainable and renewable energy mix. The country's current energy landscape is heavily reliant on fossil fuels, but there is a growing recognition of the need to harness its vast renewable energy potential. This transition is not only crucial for Indonesia's environmental sustainability but also for its economic growth and energy security.

As of now, renewable energy contributes approximately 11.3% to Indonesia's national energy supply, with hydro, geothermal, solar, wind, biofuel, and biogas being the primary sources. Despite the government's ambitious targets to increase the share of renewable energy, progress has been slow, hindered by regulatory challenges, limited infrastructure, and the need for substantial investment. The reliance on coal, oil, and natural gas remains high, posing significant environmental and health risks while also contributing to global greenhouse gas emissions.

Indonesia is endowed with an abundance of renewable energy resources. Its geographical position and natural features offer significant potential for solar, wind, hydro, geothermal, and biomass energy production. The country's equatorial location provides high solar irradiance levels, making it an ideal candidate for solar energy development. Similarly, its position along the "Ring of Fire" offers the largest geothermal reserves globally. Despite these advantages, the utilization of these resources remains low, primarily due to the lack of strategic investments and policy support (Pambudi et al., 2023).

Indonesia's journey towards a sustainable energy future is fraught with challenges but also filled with opportunities. The country's vast renewable energy potential, if fully harnessed, could significantly contribute to its economic growth, environmental sustainability, and energy security. However, this requires a concerted effort from the government, private sector, and international community to overcome the existing barriers and unlock the potential of renewable energy in Indonesia. With the right policies and investments, Indonesia can transition to a more sustainable energy system, setting an example for other countries in the region and globally.

2) Aswadi, K., Jamal, A., Syahnur, S., & Nasir, M. (2023). Renewable and Non-renewable Energy Consumption in Indonesia: Does it Matter for Economic Growth? *International Journal of Energy Economics and Policy*

In this study the authors explore the impact of renewable and non-renewable energy consumption on Indonesia's economic growth.

Utilizing a quantitative methodology, the research employs the Johansen cointegration test along with FMOLS and DOLS cointegrating regression techniques to analyze data spanning from 1980 to 2019. The findings of the study reveal a nuanced relationship between energy consumption and economic growth in Indonesia.

The study indicates that renewable energy consumption has a negative effect on Indonesia's economic growth. This adverse impact is attributed to the limited production of renewable energy despite increasing consumption levels. On the other hand, the consumption of non-renewable energy, primarily fossil fuels, exhibits a positive effect on economic growth, reflecting the country's high dependency on fossil energy. This dependency persists even as the government actively promotes renewable energy production.

When considering the combined effect of renewable and non-renewable energy consumption, the study concludes that energy consumption, in general, positively contributes to Indonesia's economic growth. This suggests that despite the current negative impact of renewable energy consumption on economic growth, the overall energy consumption, including both renewable and non-renewable sources, supports the national economy (Aswadi et al., 2023).

This research provides valuable insights into the complex dynamics between energy consumption types and economic growth in Indonesia. It underscores the challenges and opportunities in transitioning towards a more sustainable energy mix and highlights the importance of balancing renewable and non-renewable energy

consumption to support economic development. The findings of this study could inform policymakers and foreign investors interested in the development of renewable energy in Indonesia, emphasizing the need for strategic investments and policies that enhance renewable energy production while considering its economic implications.

3) Martosaputro, S., & Murti, N. (2014). Blowing The Wind Energy In Indonesia. *Conference And Exhibition Indonesia Renewable Energy & Energy Conservation*

In this article the authors delve into the potential and challenges of wind energy development in Indonesia. This comprehensive study evaluates the current state of wind energy, its future prospects, and the barriers to its expansion within the Indonesian context. The research is pivotal for understanding the role of wind energy in diversifying Indonesia's energy portfolio and reducing its reliance on fossil fuels.

The study begins by mapping the wind energy potential across Indonesia, identifying regions with the highest wind power potential. Through an analysis of wind speed data and geographical conditions, the authors highlight areas where wind energy projects could be most viable and productive. The findings suggest that certain regions in Indonesia, particularly in the eastern parts, possess significant wind energy potential due to favorable wind speeds and patterns.

Martosaputro and Murti further discuss the technological, regulatory, and financial challenges hindering the growth of wind energy in Indonesia. They point out that the lack of advanced wind energy technologies adapted to Indonesia's unique geographical and climatic

conditions is a major obstacle. Additionally, the study addresses the regulatory hurdles, including complex permitting processes and the absence of supportive policies for wind energy development. Financial challenges, such as the high initial investment costs and the limited access to funding for renewable energy projects, are also examined.

Despite these challenges, the article emphasizes the strategic importance of wind energy for Indonesia's energy security and environmental sustainability. The authors advocate for comprehensive policy reforms, including the introduction of incentives for wind energy investments and the simplification of regulatory procedures. They also call for increased collaboration between the government, private sector, and international partners to facilitate technology transfer and financial support for wind energy projects (Martosaputro & Murti, 2014).

"Blowing the Wind Energy in Indonesia" contributes valuable insights into the untapped potential of wind energy in Indonesia and outlines a roadmap for overcoming the barriers to its development. This research is particularly relevant for stakeholders interested in the renewable energy sector, including policymakers, investors, and researchers, as it provides a detailed analysis of the opportunities and challenges associated with wind energy in Indonesia. The findings underscore the need for a concerted effort to harness wind energy as a key component of Indonesia's renewable energy strategy, highlighting its potential to contribute to the country's economic growth and environmental goals.

4) Satwika, N. A., Hantoro, R., Septyaningrum, E., & Mahmashani, A. W. (2019). Analysis of wind energy potential and wind energy development to evaluate performance of wind turbine installation in Bali

In the study "Analysis of wind energy potential and wind energy development to evaluate performance of wind turbine installation in Bali, Indonesia" by Satwika, N. A., Hantoro, R., Septyaningrum, E., & Mahmashani, A. W. (2019), published in the Journal of Mechanical Engineering and Sciences, the authors undertake a comprehensive evaluation of wind energy's potential in Bali, Indonesia, and its implications for wind turbine installations. This research is instrumental in understanding the viability of wind energy as a sustainable energy source in Bali and provides insights into optimizing wind turbine performance in the region.

The study meticulously analyzes wind speed data and other relevant meteorological parameters to assess the wind energy potential in Bali. By employing advanced modeling techniques, the research identifies optimal locations for wind turbine installations, considering factors such as wind speed consistency, direction, and the geographical characteristics of potential sites. The findings reveal that certain areas in Bali exhibit high wind energy potential, making them suitable for wind turbine projects.

Further, the research delves into the technical and economic aspects of wind turbine installations in Bali. It evaluates the performance of existing wind turbines based on their energy output and efficiency in harnessing the wind energy available. The study also examines the cost-

effectiveness of wind energy projects, taking into account the initial investment, maintenance costs, and the expected energy production over the turbines' lifespan.

One of the key contributions of this study is its analysis of the challenges facing wind energy development in Bali. These challenges include technical issues related to turbine design and installation, financial constraints, and regulatory barriers. The authors suggest that addressing these challenges requires a multi-faceted approach, involving technological innovation, financial incentives, and policy support.

The study concludes that wind energy holds significant promise for contributing to Bali's renewable energy mix and reducing its dependence on fossil fuels. However, realizing this potential necessitates targeted efforts to overcome the existing obstacles to wind energy development. The authors advocate for increased investment in research and development to enhance turbine efficiency and adaptability to Bali's wind conditions. They also call for more supportive policies and regulations to encourage investment in wind energy projects (Satwika et al., 2019).

"Analysis of wind energy potential and wind energy development to evaluate performance of wind turbine installation in Bali, Indonesia" provides a valuable framework for assessing wind energy potential and guiding the strategic development of wind power in Bali. This research is particularly relevant for policymakers, investors, and energy planners seeking to expand renewable energy sources in Indonesia. It underscores the importance of leveraging local wind resources to advance sustainable

energy goals and highlights the need for comprehensive strategies to facilitate the growth of wind energy in the region.