Renewable Energy Governance in Indonesia: A Study of Transparency and Participation in Yogyakarta

by

Fajar Fadli

Thesis
Submitted to Flinders University
for the degree of

Doctor of Philosophy

College of Business, Government and Law
September 2021

TABLE OF CONTENTS

ABSTRACT

Indonesia holds massive potential for renewable energy development. Despite Indonesia's official pronouncements and targets set in this regard, development of renewable energy in Indonesia remains unsatisfactory. This thesis investigates whether and to what extent poor governance processes have impacted renewable energy development in Indonesia. The investigation is focused on two governance indicators, namely transparency and public participation.

This thesis adopts a qualitative approach. A case study was conducted in Yogyakarta province to explore the phenomenon from multiple perspectives and to gain an in-depth understanding of the state of transparency and public participation in renewable energy governance processes. An evaluation framework was developed drawing on relevant literature in the area of governance and environmental policy-making. Data was gathered through a series of in-depth interviews and a focus group discussion with participants from central and local government, private energy providers, and non-governmental and civil society organisations. In addition, information was obtained from secondary sources, such as government documents and reports, news articles, and internet-based sources.

Transparency was found to have an important role for accountability, in keeping the public informed, and in building trust, while public participation was vital for gaining legitimacy, mobilizing support from stakeholders, improving their knowledge and awareness and enhancing the quality of decisions. The study found that a lack of transparency and public participation in decision-making processes has impacted the development of renewable energy in Indonesia. A number of barriers to effective governance processes were also identified, including a lack of commitment from central and provincial governments, a monopolistic market structure, poor regulatory frameworks, and inadequate knowledge about renewable energy issues.

The case in Yogyakarta has revealed that subnational government suffers from limitations, including inadequate expertise and knowledge, poor financial capacity and authority in the energy sector to advance renewable energy development agenda. In turn, this calls for, strong leadership and adequate supports from central government. However, while the central government's role is vital, its commitment toward renewable energy development remains in doubt. Currently, energy policy-making processes are highly centralized and prone to undue influence by powerful economic and political forces, particularly from the coal industry. Hence, policies and programs in the energy sector tend to favour fossil-fuel based energy with very little or no support for renewable energy development.

The study concludes that current renewable energy governance needs a rethink. A new form of governance that enables greater transparency and public participation is required to deal with cross-cutting policy issues such as renewable energy development. This thesis proposes a framework to guide the integration of transparency and public participation to improve trust in and the legitimacy of energy governance. The framework is designed to ensure a transparent and participative governance that will disperse the concentration of power of vested interests in the policy making process and enable the public to monitor policy processes and keep renewable energy as a priority on the policy agenda.

DECLARATION

I certify that this thesis does not incorporate without acknowledgment any material previously submitted for a degree or diploma in any university; and that to the best of my knowledge and belief it does not contain any material previously published or written by another person except where due reference is made in the text.

Fajar Fadli
30 May 2021

ACKNOWLEDGEMENTS

Alhamdullilah. I am blessed and thankful to Allah that I am finally able to complete this thesis. I am also indebted for the support of many people and institutions who provided support, direction, and encouragement throughout my study.

First, I would like to express my deep and sincere gratitude to my supervisors, Associate Professor Noore Siddiquee and Dr. Peter Tangney, for their invaluable guidance and encouragement during my study. I would also like to thank to my former supervisor Associate Professor Janet McIntyre who helped to lay up foundation of this study and Dr. Priyambudi Sulistiyanto for his support at the initial stage of my study.

I would like to acknowledge the contribution from the Australia Award Scholarship for providing the opportunity and financial support to pursue study in Australia. I would thank to all the staff at the College of Business, Government and Law and International Student Service (ISS) Flinders University for their assistance. My sincere gratitude also goes to the Ministry of Finance that has allow me to continue my study to a higher level and to the Provincial Government of Yogyakarta who have welcome me to conduct research in Yogyakarta.

My gratitude also goes to my colleagues for their support and fruitful discussions. I am also indebted for all the support provided from Indonesian communities in Adelaide, KIA, MIIAS, and PBB for its warm welcome and friendships. I would also like to acknowledge the support from the research participants during my fieldwork in Indonesia.

Last, but not least, I extremely grateful to my wife for her support, endless patience and support and to my kids who always keep the candle burning. My gratitude also goes to my parents and parents-in-law for their sincere thoughts and endless prayers during my study. May Allah bless us and protect us.

LIST OF FIGURES

LIST OF TABLES

CHAPTER 1
INTRODUCTION

1.1 Background

Since the Industrial Revolution of the 18th and 19th centuries, the exploitation of people and natural resources has increasingly resulted in humans' ecological unsustainability. Steffen et al. (2005) argue that we have now entered an era of anthropocentrism in which the planet is dominated by humans in ways that have seriously impacted the functions of Earth systems. The Intergovernmental Panel on Climate Change (IPCC) notes that combustion of fossil fuel and industrial processes have contributed to more than three quarters of the increase of the world's carbon emissions over the last four decades (IPCC, 2014). This has accentuated the existential risks from climate change and the likelihood of severe impacts on both humankind and the Earth's ecosystems (Bostrom, 2011).

The United Nations (UN) through the 2030 Agenda has promoted the transition from fossil fuels to renewable energy in order to mitigate the impact of climate change. This is reflected in their Sustainable Development Goal (SDG) number 7: "Affordable and Clean Energy" which emphasises the importance of the transition from fossil fuels to renewable energy usage as a means to transform lives, economies and the planet. Many countries have now pledged to improve their renewable energy utilization. 165 countries have submitted their Intended Nationally Determined Contributions (INDC) to the UN to show their commitment to mitigating climate change and improving the renewable energy uptake rate.

However, a report from REN21 (2019) notes that the world's progress in achieving UN SDGs in order to provide energy access and sustainable energy options has been stagnant. Many governments and societies globally are faced with governance challenges that hinder their management of energy transition and expanded use of renewable energy (Sawin et al.,

2014). This is also the case in Indonesia. Despite the Indonesian government's commitments at an international and national level and its large potential resources of renewables, the utilization rate of renewable energy in Indonesia is unsatisfactory. The development of renewable energy in Indonesia has been hampered by various challenges including fossil fuel subsidies (Bridle, 2018), an unfavourable business climate for renewable energy (Maulidia, Dargusch, Ashworth, & Ardiansyah, 2019) and ineffective energy governance (Gunningham, 2013).

This thesis investigates energy governance in Indonesia and shows how ineffective governance practice, as explained by Gunningham (2013), has become the central challenge in developing renewable energy. Poor coordination, conflict of interest, lack of awareness and capacity and lack of transparency and participation, have been identified as obstacles to effective energy governance (Gunningham, 2013; Marquardt, 2014; Rachmi, Wattimena, Nisa, Sari, & Herliana, 2005). The thesis argues that the current governance practice has failed to identify and to bridge the multiple interests of energy stakeholders and thereby discouraged them from pursuing the development of renewable energy in Indonesia. The lack of transparency and participation in governance and decision-making processes has rendered the various policies and programs for supporting renewable energy development ineffective.

Two governance indicators will be the focus of this study, namely: transparency and public participation. This thesis will explore the extent to which both indicators are present in governance processes and how they affected the development of renewable energy in Indonesia. Before further discussing the research, the next section provides an overview of the energy sector in Indonesia in order to provide a context for this study.

1.2 Overview of the energy sector in Indonesia

Indonesia is the largest economy in Southeast Asia and a member of the G-20 (OECD, 2018). With steady economic growth of five percent per year in the last two decades and a population of around 270 million (World Bank, 2018, p. 1), Indonesia's energy demand is continuously increasing. In 2018, the total final energy consumption reached 936.3 million TOE (tonne of oil equivalent), an increase of 9.4 percent from the previous year (MEMR, 2019a). The increase was mainly driven by consumption in the transportation, industry and household sectors.

1.2.1 Energy Sources

According to the Ministry of Energy and Mineral Resources (MEMR), more than 90 percent of energy supply is sourced from oil, gas, and coal (MEMR, 2019a). Oil is the main source of energy in Indonesia. In 2018, 38.8 percent of energy consumption was sourced from oil (MEMR, 2019a). Oil demand is mainly driven by the transportation sector and this accounted for 88 percent of the total fuel oil consumption (Akhmad & Amir, 2018). To fulfil its demand, Indonesia has to import oil from other countries. Indonesia was once an oil exporting country. However, due to its depleted oil reserves and increasing demand, Indonesia has been an oil-importer since 2003. The rising demand for oil has resulted in an increase of the import dependency ratio[1], a rise from 35 percent in 2007 to 51 percent in 2016 which implies high reliance over energy source from abroad. It also shows insecurity of energy supply (National Energy Council, 2017).

Coal is an important commodity for Indonesia's economy and an important energy source. It is the cheapest energy source for Indonesia as the country has significant reserves of coal (Cornot-Gandolphe, 2017). A report from British Petroleum notes that Indonesia holds 9.6

[1] Import dependency ratio is import divided by domestic supply (Production+Export-Import).

percent of the world's coal reserve which is the sixth largest coal reserve globally after the US, Russia, Australia, China, and India (British Petroleum, 2019). According to the International Energy Agency (IEA), in 2017, Indonesia overtook Australia as the largest exporter of thermal coal which is used for power generation (IEA, 2018). However, despite the large reserves, the majority of Indonesia's coal reserves can be categorized as low quality. Hadiyanto (2006) notes that only 13 percent of coal reserves in Indonesia have a calorific value higher than 6,100 kcal/kg (high quality coal).

The growth of coal production in Indonesia is largely determined by external factors, particularly demand from China and India (Cornot-Gandolphe, 2017). In the domestic market, coal is projected to maintain its position in the future. In the National Energy Policy, the Indonesian government has projected that coal will become the primary energy source accounting for 30 percent of total energy supply in 2025, higher than oil and gas (GoI, 2017). Recently, the government also issued a law regarding minerals and coal which incentivises the exploration and exploitation of coal and which will contribute to further production growth.

Natural gas reserves in Indonesia are the 11th largest in the world. By the end of 2018, potential resources are estimated to have reached 2.8 trillion cubic metres or 1.4 percent of the world's natural gas reserve (British Petroleum, 2019). A large portion of the gas produced in Indonesia is exported. The production is dominated by foreign companies with a share of 87 percent, while the remainder is produced by PT Pertamina, a state owned oil company (Indonesia Investment, 2016). The National Energy Council (2017) claims that the export of natural gas consumed nearly half of its production.

The combustion of fossil energy consumption has detrimental effects on both the environment and the economy. In 2015, Indonesia became the fourth largest greenhouse gases (GHG) emissions producer globally (Dunne, 2019). GHG emissions contributed from the energy sector have risen from 317,609 Gigatons CO_2e in 2010 to 538,025 Gigatons CO_2e

in 2016; an increase of 41 percent during the period (Ministry of Environment and Forestry, 2018). In addition, the increasing exploitation of fossil energy sources has contributed to an increasing rate of deforestation. Bradshaw, Sodhi, PEH, and Brook (2007) claim that deforestation can intensify the frequency of natural disasters such as floods as it will disturb the natural water catchment system and erode soil. A report from the Intergovernmental Panel on Climate Change (IPCC) notes that that the impact of climate change has been experienced in many regions in Indonesia with higher frequency and intensity, along with cascading impacts (IPCC, 2018).

In terms of renewable energy, Indonesia is blessed with abundant renewable energy resources. As can be seen from Table 1.1, the country claimed to have potential resources of renewable energy around 443.2 Giga Watt (GW) that are sourced from geothermal, hydro, biomass, solar, wind, and marine. However, the potential resources are underdeveloped.

Table 1.1: The Potential of Renewable Energy Resources in Indonesia

No.	Renewable Energy Type	Potential Resources (MW)	Installed Capacity (MW)	Underdeveloped Potential
1	Geothermal	29,544.0	1,438.5	95.13%
2	Hydro	94,476.0	5,024.1	94.68%
3	Biomass	32,654.0	1,671.0	94.88%
4	Solar	207,898.0	78.5	99.96%
5	Wind	60,647.0	3.1	99.99%
6	Marine	17,989.0	0.3	100.00%
Total		**443,208.0**	**8,215.5**	**98.15%**

Source: (Presidential Regulation Number 22 (Appendix), 2017, p. 20)

The utilization of solar as the biggest potential energy source is almost non-existent, under 1 percent. To date, solar power plants in Indonesia consist of small capacity projects that lack economies of scale. The Institute for Energy Economics and Financial Analysis (IEEFA) has argued that policy and regulation are the main barriers to the development of solar energy as

the government continues to pursue solar policies that harm private investment (Puspa, 2019). For example, the build, operate, own, and transfer (BOOT) scheme requires the private sector to transfer the power plants back to the state electricity company (PLN) after the end of the business contract, which can range from periods of between 25 and 30 years. Similar to solar energy, the utilization of wind as energy source is also underdeveloped. From the potential of 60.6 GW, only 9.4 MW had been installed by early 2016 or less than 1 percent from the potential (International Renewable Energy Agency, 2017). Most of the existing wind power plants are small and are used for research purposes. The first commercial and large scale wind power plant was built in 2018 in Sidrap, South Sulawesi with the capacity of 75 MW. Maulidia, Dargusch, Ashworth, and Wicaksono (2019) found that support from local government and benefit for local people were the key factors in developing large-scale wind farms in Sidrap. They also argue that lack of consistency of policy and regulation is still the main barrier for private investment in wind energy development in Indonesia.

Currently, renewable energy in Indonesia is dominated by three types of energy namely, hydro, geothermal, and biomass. Hydro is the largest utilized renewable energy source. In 2015, the capacity of hydro energy reached 5.0 GW or five percent of its potential. The largest hydro power plant is the Cirata Dam in West java which has 1 GW of capacity.

In terms of geothermal, Indonesia has 40% of the world's known geothermal resources (Wilcox, 2012). Indonesia began to promote geothermal energy after the 2010 World Geothermal Congress in Bali. President Yudhoyono committed to build 44 geothermal plants that could produce capacity of 4 GW. The government also introduced Feed-in Tariff (Fit)[2] policy for geothermal energy to attract private investors. However, by 2015, the utilization of geothermal only reached 1.4 GW or around five percent of its potential. Institutional,

[2] FiT policies commonly include: (i) guaranteed access to the grid, (ii) stable, long-term purchase agreements, and (iii) payment levels based on the costs of RE generation (Mendonça, 2009).

regulatory, and tariff constraints have been identified as factors that hamper the development of geothermal energy in Indonesia (International Renewable Energy Agency, 2017).

Indonesia also has a huge potential resource in the form of biomass. The government claims to have 35.7 GW potential energy sources from biomass that are mainly sourced from palm, rice husk, and municipal solid waste (Kusdiana, 2014). By 2015, the utilization rate had reached 1.7 GW or around five percent of its potential (Presidential Regulation Number 22 (Appendix), 2017). Recently, the Indonesian government has required diesel powered vehicles to use B30 fuel which is a fuel mix comprising between 30 percent biodiesel and 70 percent diesel, starting from January 2020. This requirement will be extended to B50 fuel by the end of 2020. The targets are not only for vehicles, but also for diesel fuelled power plants owned by the state electricity company (PLN). This policy is expected to reduce oil consumption and to increase the renewable energy share. However several factors such as incoherent policy, lack of incentives and lack of coordination between central and local government, have hampered the development of bioenergy in Indonesia (Dharmawan, Sudaryanti, Prameswari, Amalia, & Dermawan, 2018).

1.2.2 Energy Policies

This section explores mainstream policies in the energy sector including energy subsidies, the expansion of power generation, and renewable energy policy. Overall, Indonesia's energy policy still favours non-renewable energy resources.

1.2.2.1 Energy Subsidy: Fuel and Electricity Subsidies

Indonesia has a long history of subsidising energy prices as a means of supporting poor households. Energy subsidies started during the era of Soekarno, the first president of Indonesia, when Indonesia became a member of The Organization of the Petroleum Exporting Countries (OPEC). The subsidy was provided to energy products such as gasoline,

kerosene, and electricity. This subsidy enabled the government to control prices and to thereby ensure that the low-income groups can afford the energy commodities.

To date, energy subsidy is still part of the Indonesian energy policy landscape. The latest Energy Law number 30/2007 article 7 stipulates that the government should allocate a budget to subsidize energy for the poor. In 2019, the government allocated IDR 160 trillion (equal to around USD 11 billion) for energy subsidies, approximately 10 percent of the central government expenditure (MoF, 2019). Energy subsidy has been perceived as an expensive means to support the poor and as placing a burden on public expenditure at the expense of other spending priorities such as education, health, and infrastructure (Asian Development Bank, 2015).

The subsidies for fossil energy have hampered the development of renewable energy. Energy subsidies are given to fuel and electricity which are mainly sourced from oil and coal. In this regard, energy subsidy is indirectly a subsidy for fossil energy. The subsidies make fossil energy cheaper and thereby hinder the competitiveness of renewable energy. This encourages investment in fossil energy rather than in renewable energy as fossil fuel receives more support from the government (Bridle & Kitson, 2014).

The subsidy to fossil-based energy has also had adverse effects on the environment. Lower prices have encouraged higher energy consumption which increases the amount of greenhouse gas emissions. Recently, Jakarta, the capital city of Indonesia which is the centre of government and business activities, has been ranked as the most air-polluted city in the world (AirVisual, 2019).

However, the government has committed to reform its energy subsidy policy by significantly reducing the volume of subsidised gasoline. From Table 1.2, it can be seen that the budget for energy subsidies more than halved between 2014 and 2019. This provides momentum for greater reform in the energy sector to promote renewable energy utilization.

Table 1.2: Energy Subsidies

(in trillion Rupiah)

Energy Subsidies	2014	2015	2016	2017	2018	2019
Fuel Subsidy	240	60.8	43.7	47	103.5	100.7
Electricity Subsidy	101.8	58.3	63.1	50.6	60	59.3
Total	**341.8**	**119.1**	**106.8**	**97.6**	**163.5**	**160.0**

Source: Indonesian Ministry of Finance

1.2.2.2 Expansion of power generation: The 35,000 MW Program for Indonesia

Another mainstream policy is the expansion of power generation through a program called "35,000 Mega Watt for Indonesia". The program was introduced in May 2015 by President Jokowi to generate 35,000 MW electricity by 2019. The purpose of this program was to address the growing demand for electricity and to increase the electrification ratio or the percentage of households that are connected to the electricity grid.

This program is estimated to require investment value of more than USD 87 billion (Deloitte, 2016). To ease the fiscal burden, PLN invited private companies to develop the 35,000 MW program. 35 projects with a total combined capacity of around 10,000 MW will be carried out by the state electricity company, known as PLN, while the private sector is expected to contribute to execute 74 projects with a total capacity of around 25,000 MW (inhouse community, 2016).

To encourage involvement by the private sector, several favourable regulations regarding land acquisition processes, partnerships, and business agreements were introduced. As a result, the program has attracted many investors. Deloitte (2016) notes that by September 2015, 88 foreign investors had acquired business permits and qualified to invest into the 35,000 MW program. Additionally, 66 local investors were ready to engage.

Although this program also sought to promote the utilization of renewable sources, fossil fuels still largely dominated the energy source for the program. Cornot-Gandolphe (2017) claims that 56 percent was planned to be sourced from coal and 36 percent from natural gas.

Renewable energy would contribute around 8 percent. It is estimated that the program will increase coal consumption from 130 million tonnes per year to 214 million per year (Deloitte, 2016).

The construction of coal-based power plants has prompted protests by environmental NGOs such as Greenpeace and Walhi. Greenpeace argued that the health impacts caused by steam fired power plants (coal) could reach approximately Rp351 trillion or USD23.4 billion annually (Amindoni, 2017). Furthermore, Walhi considered that the construction of coal-based power plants in Indramayu and Cirebon, West Java Province did not benefit the local people as the areas already had access to electricity. On the contrary, the construction has caused negative environmental impacts such as air pollution, sea pollution, deforestation, and a negative economic impact, as local fishermen have to sail further (Zein, 2019).

1.2.2.3 Renewable Energy Policy

The PricewaterhouseCoopers (2017, p. 105) report notes the threefold objectives that underlie the pursuit of improved renewable energy utilization for Indonesia. First, renewable energy provides an alternative energy source for supplying the growing domestic demand. Second, it can provide greater energy access for rural, remote, and border areas which have not been reached by the power grid. And lastly, the enhancement of renewable energy is seen as a means of reducing greenhouse gas emissions and of supporting a climate change risk mitigation plan.

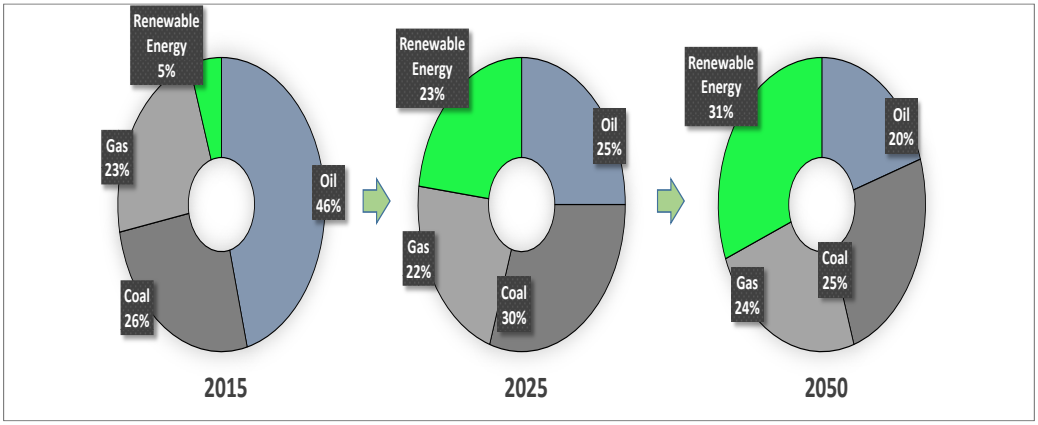
To facilitate transition Indonesia has set renewable energy targets, under four National Energy Policies. The evolution of renewable energy targets started with the National Energy Policy 2003 - 2020 and was updated by the National Energy Policy 2006, the National Energy Plan 2014, and, most recently, by the National Energy Plan 2017.

The National Energy Policy 2003 - 2020 can be considered as the starting point of Indonesia's commitment to developing renewable energy because the target of renewable energy was specifically stated in the policy objectives. Through the enactment of the MEMR Decree number 0983/K116/MEM/2004, Indonesia sought to have at least five percent of its total energy account in 2020 based on renewables, by utilizing energy sources such as geothermal, biomass, and micro/mini hydro. Strategies to achieve the target were also specified such as supportive regulations, tax incentives, partnerships with the private sector and community empowerment.

Next, through Presidential Regulation 5 of 2006 regarding National Energy Policy, renewable energy targets were raised. The government set a target of achieving 15 percent renewables within its total energy account by 2025. This target would comprise biofuel (5%), geothermal (5%), and others such as biomass, nuclear, micro/mini hydro, solar, and wind (5%). Moreover, a special unit devoted to accelerate the development of renewable energy was established in 2010 based on Presidential Regulation 24 of 2010. The unit was under MEMR, namely the Directorate General of New Renewable Energy and Energy Conservation.

In 2014, National Energy Policy was revised through Government Regulation 79 of 2014 regarding National Energy Plan, known as *Kebijakan Energi Nasional* (KEN). In this policy, the government lifted its renewable energy target by aiming to achieve at least 23 percent and 31 percent renewables within the total energy account by 2025 and 2050 respectively (Figure 1.1). The targets were also forwarded to the international level. In 2015, Indonesia submitted its Intended Nationally Determine Contribution (INDC) to the United Nations Framework Convention on Climate Change (UNFCCC) and committed to enhance renewable energy as part of its overall strategies to reduce carbon emissions.

Figure 1.1: Indonesia's Energy Mix Target



Source: Adopted from the Presidential Regulation number 22 of 2017

KEN 2014 was followed up by the enactment of National Energy Plan (RUEN) in 2017 which scrutinized energy plan and strategies including the projection of energy supply and demand until 2050. Overall, the government targeted to improve the renewable energy share in the national energy account. Furthermore, the utilization of oil as an energy source is predicted to decrease as the government will minimize the amount of oil imported from other countries and replace it with renewable resources. Meanwhile, the contribution of coal and gas as energy sources is projected to remain stable until 2050.

However, there are some inconsistencies with the commitment to increase renewable energy share. During the period 2016 – 2017, the newly appointed minister enacted The Minister of Energy Decree number 12 of 2017 and introduced a new renewable energy price regime, besides revoking the Feed in Tariff mechanism. The new regulation stipulates the ceiling price of renewable energy is a maximum 85% of power generated from fossil fuel produced by PLN. In other words, the selling price of renewable energy to PLN is set lower than the production cost of fossil-based energy.

The Minister of Energy Decree number 12 of 2017 did not last long. The Minister issued a new regulation, Decree number 50 of 2017. The enactment of the new regulation did not

actually rectify the condition for renewable energy development. This regulation has significant implications for PLN's position and power in the renewable energy sector since PLN has been given a bigger role in appointing project developers and in negotiating the prices of renewable energy. This role potentially creates a conflict of interest for PLN as PLN businesses are mainly fuelled by fossil sources particularly coal. Hence, PLN will only buy renewable energy if its price is lower than fossil energy as currently PLN has an oversupply of energy.

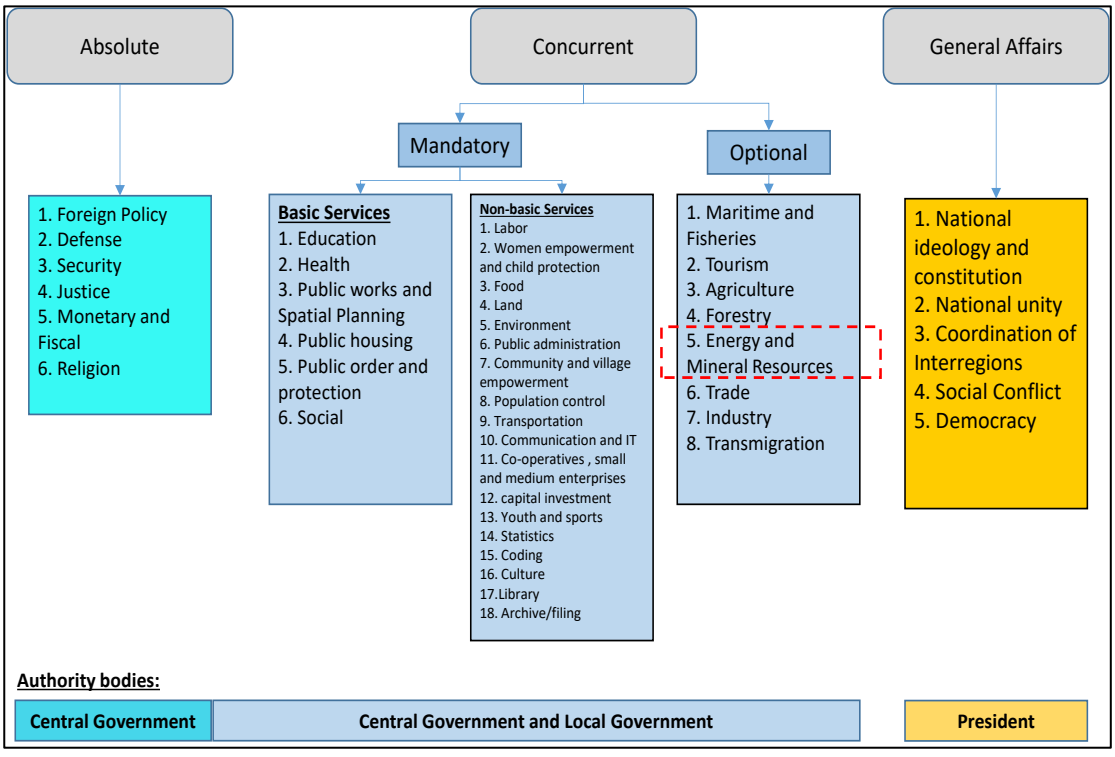
Another setback to the decree number 50 of 2017 is the partnerships model between PLN and the private sector which adopts the Build, Own, Operate, and Transfer (BOOT) scheme. Under this scheme private energy companies are required to transfer assets to the PLN after a certain period of operation. This regulation has prompted protests from the renewable energy industry. Energy experts view this policy as being defective as it could drive away investment rather than facilitate it (Jakarta Post, 2017).

1.2.3 Decentralization and Energy Governance

The decentralization era in Indonesia began in 1999. A series of massive demonstrations throughout the country ended the 32 years of Soeharto's administration in 1998. Under Soeharto's administration, Indonesia was perceived as being one of the most centralized countries in the world (B. D. Lewis, 2005). The Indonesian bureaucracy was dominated by the military and Golkar, the ruling party (Bennet, 2010). In addition, the provincial and local government leaders were appointed by the president. After Soeharto was replaced by his vice president, Habibie, an election was held to choose a new President in 1999. Under the newly elected president, Abdurrahman Wahid, the decentralization era was introduced through the enactment of Law 22 Year 1999 about Local Government Administrative System and law 25 Year 1999 about Fiscal Balance between Central and Local Government. This decentralization process encompassed political, administrative and fiscal aspects.

The most recent arrangement of authority between central and local government was stipulated in the Law number 23 of 2014 concerning Local Government. It divides government affairs into three groups based on the principles of accountability, efficiency, externalities and national strategic interests. As can be seen from Figure 1.2, the division of responsibilities are: (1) Absolute affair, that is the ultimate authority of central government, such as foreign affairs, justice, religion, defense, security and monetary and fiscal policy; (2) Concurrent affair where responsibilities are shared between three levels of government, namely central, provincial, and/or district levels; and (3) General affair which relates to the national integrity issue and is under the authority of the President as head of government. In relation to the focus of this study, renewable energy is classified as part of the concurrent affair. Further, article 14 of Law 23/2014 stipulates that the responsibility for energy affairs is shared between the central government and provincial governments. However, the detail about energy governance was not explained within the regulation.

Figure 1.2: The Division of Government Affairs



Source: Law 23 Year 2014, Republic of Indonesia

A more specific arrangement of energy affairs can be found in the Law of Energy number 30/2007. This Law stipulates that energy resources including renewable and non-renewable resources should be controlled by the (central) government and utilized for the greatest benefit of the people. Based on the provisions of this law, the government also formed the National Energy Council (DEN) which has the authority to formulate National Energy Policy. The council consists of seven ministers (Minister of National Development/ Planning Agency, Minister of Finance, Ministry of Environment and Forestry, Minister of Industry, Minister of Transportation, Minister of Research, Technology and Higher Education, and Minister of Agriculture) and eight non-governmental members from academia, the industry sector, the technology sector, an environmentalist and consumer representatives. It is chaired by the President and Minister of Energy and Mineral Resources as the acting leader.

The Ministry of Energy and Mineral Resources (MEMR) is the main institution responsible for the implementation of the National Energy Policy as well as for making regulations in the energy sector. Other ministries are also involved for specific purposes. For example, the Ministry of Finance is involved for subsidies and financing matters, the Ministry of Forestry and Environment for the utilization of forests, and the Ministry of Public Works and Public Housing for water resource utilization. The role of central government is also enhanced by the existence of two state owned companies who hold monopoly rights for the production and distribution of energy. These companies are PLN in the electricity sector and PERTAMINA in the oil and gas sectors. Both companies are under the supervision of the Ministry of State-Owned Enterprises.

With respect to the role of sub-national governments, article 26 of Energy Law suggests that provincial and local governments should have the authority to establish policy and regulation

regarding energy governance within their regions. In addition, article 19 of the Law recommends public involvement in the formulation of national and provincial energy policies.

Although the Law of Energy number 30/2007 mandates the engagement of local governments and the public, Rachmi et al. (2005) argue that the level of public participation in the energy policy making process remains low since only certain organizations or individuals are involved. A local newspaper, Mongabay (2017) also notes that local residents were sometimes excluded from the planning process and did not have opportunities to express their opinions. In addition, transparency has also been an issue in energy governance as information regarding the policy making process is not made public (Rachmi et al., 2005).

1.3 Research Rationale

Indonesia represents a compelling case study for numerous reasons. First, Indonesia is an example of an emerging economy, which, along with other countries such as China and India, possesses great resources of fossil energy and renewable energy. Second, despite the ambitious targets and great potential sources, the pace of development of renewable energy in Indonesia remains slow. The annual growth of renewable energy is stagnant at just over one percent of total energy account during 2015 to 2018 (Bappenas, 2017; Maulidia, Dargusch, Ashworth, & Ardiansyah, 2019). Currently, renewable energy comprises 8.5 percent of Indonesia's energy account (MEMR, 2019a), far below the milestone set by the government of achieving 23 percent by 2025. Given the current circumstances, it is unlikely that Indonesia will achieve this target in its national Energy Policy as well as meet its commitment to the United Nations Framework Convention on Climate Change (UNFCC). Lastly, renewable energy governance in Indonesia is under investigated. There is a dearth of scholarly literature on renewable energy governance in Indonesia. Among the few extant

works are those of Gunningham (2013), Marquardt (2014), and Maulidia, Dargusch, Ashworth, and Ardiansyah (2019). They have provided an overview of this area of research and have recommended that further research be undertaken in order to extend our knowledge of the renewable energy governance area.

The study of Gunningham (2013) highlights the importance of understanding the tensions which arise from the energy trilemma (the competing needs for energy security, reducing energy poverty and enhancing environmental sustainability) in energy governance. Failure to manage this energy trilemma will have significant implications for the successful transition towards renewable energy and other climate change mitigation initiatives. The author argues that the Indonesian government has failed to address the tensions and trade-offs that arise between the different elements of the energy trilemma. The energy subsidy, for example, that aimed to solve the energy poverty problem has adversely affected energy security. As fuel prices decreased as a result of the government subsidy, this price decline encouraged greater fuel consumption. As a result, to date, Indonesia depends on energy imports to meet its domestic fuel demand and this dependence makes the country vulnerable to energy price shocks from the international market. In addition, the government launched a “Crash Program” which was intended to increase electricity generating capacity. Although, this program will initially be complemented with renewable energy-based power plants, it is largely dominated by coal power plants. Both the energy subsidy and the “Crash Program” will therefore inevitably have negative effects on environmental sustainability.

The study suggests that an appropriate form of governance should be developed and deployed to deal with the energy trilemma. However, this will not happen easily. Among other factors, the most challenging obstacles to achieving good energy governance in Indonesia arise in the realm of political economy. These obstacles include political expediency (maintaining fuel subsidies in order to avoid protests), corruption, vested interests

(particularly those of the coal industry) and the tension between central and local governments. Furthermore, the development of good governance will largely depend on the willingness and commitment of the Indonesian government to undertake structural reform in the energy sector.

The work of Gunningham (2013) provides a useful overview of Indonesian energy governance through the lens of the energy trilemma. While the study reveals why current energy governance is problematic, it did not explore the actual governance practices, institutions or actors involved, their roles and the relationships among them, all of which require scrutiny in order to provide a better context for understanding energy governance in Indonesia.

The study of Marquardt (2014) investigates how Indonesia's multi-level governance system affects the transition towards renewable energy. This study found that there has been a lack of coordination between national and subnational levels. The impact of this lack of coordination presents has been twofold. First, national policy makers fail to understand local circumstances. Second, subnational levels of governance lack awareness of national policy objectives. These conditions have led to delays in policy implementation as well as to uncoordinated activities. Political aspects including decentralization, complex corruption, and lack of coordination are identified as being the main factors that affect support for renewable energy development. The study also suggests that district government is the major obstacle to developing renewable energy in Indonesia. The lack of awareness of renewable energy among district government has led to delays in policy implementation and to uncoordinated activities. Thus, involving local governments at an early stage of policy formulation is necessary in order to avoid such undesirable outcomes.

The study highlights the fact that energy governance needs to involve early participation by local government in order to raise awareness and to smoothen policy implementation.

However, as energy policy is dynamic, some of the findings of the study are now outdated. For example, the study notes that the responsibilities for energy policy reside with district or city government administration, while according to the latest regulation, Law 23 of 2014, provincial government has responsibility for energy matters at provincial or local level. In addition, Marquardt (2014) did not examine why local government's participation has been limited in energy policy making process. These lacunae will be addressed in my thesis.

Maulidia, Dargusch, Ashworth, and Ardiansyah (2019) examined the energy policy landscape and the role of the private sector in developing renewable energy. Their study found that Indonesia's energy policy is short sighted, relies on cheaper energy sources and is unsustainable. It has become the main reason why the country remains and will continue to rely on coal as the main energy source. Hence, the government has undermined the long-term benefits and sustainability of renewable energy.

Underinvestment is the major barrier to shifting the energy regime from fossil-based to renewable sources. To facilitate this transition, the government needs to mobilise funding and to improve institutional coordination with the private sector. However, to date the engagement of the private sector in the decision-making process has been limited. The monopolistic nature of the energy market structure has led to inefficiencies and limited the role of the private sector in formulating energy policy. The study suggests that the Indonesian government should involve the private sector in the policy making process and take their perspectives into account. Support from the private sector, therefore, can address the government's concern about funding and facilitate technology transfer for renewable energy development.

While the work of Maulidia, Dargusch, Ashworth, and Ardiansyah (2019) offers valuable insights into renewable energy governance in Indonesia, the perspectives of other stakeholders including central and subnational governments, the private sector and civil

society actors were under explored. Further research is required in order to explore the roles of such actors. By exploring the perspectives of additional stakeholders, such as local government and civil society organisations, one can gain a broader and more balanced understanding of the renewable energy discourse in Indonesia.

The works of Gunningham (2013), Marquardt (2014), and Maulidia, Dargusch, Ashworth, and Ardiansyah (2019) have provided valuable insights into renewable energy governance in Indonesia. However, their studies focused mainly on governance at the national level. The study of energy governance at the subnational level remains under explored. It is imperative to study the role of subnational government in energy governance since energy is one of the public policy affairs that is decentralized. This means that the success of policy implementation at provincial levels largely depends on the role of provincial government. A study that explores energy governance at the subnational level should yield valuable new information that will enhance our understanding of the development of renewable energy in Indonesia. Furthermore, given the dynamic nature of renewable energy policy in Indonesia, a new study can update the existing literature by taking account of the many revisions that have been made to regulations and policy. Additionally, a case study will yield valuable empirical evidence and in-depth information about governance processes in Indonesia's renewable energy sector.

1.4 Research Objectives

This research project aims to investigate the relationship between governance practice and renewable energy development in Indonesia. This study focuses on two governance indicators namely, transparency and public participation. The selection of transparency and public participation is in line with UNDP Reports which stress the need for new forms of governance that allow for greater levels of transparency and participation (Malik, 2013). Transparency and public participation have also been identified as key elements of good

governance. Transparency is seen to be significant for increasing public acceptance of policies produced by the government (De Fine Licht, Naurin, Esaiasson, & Gilljam, 2014), while public participation can improve the legitimacy of decisions and can mobilize support from wider stakeholders (Beierle, 2010; Creighton, 2005). Furthermore, the role of transparency and public participation in determining the success of environmental policy has been stressed in the governance literature (Beierle, 2010; Eden, 2016; Florini & Sovacool, 2009; Gupta, 2014; Steg, Perlaviciute, & van der Werff, 2015). The right to have a voice and to gain access to information are basic human rights that need to be protected and guaranteed (Nussbaum, 2011; Amartya Sen, 1993; Stiglitz, Sen, & Fitoussi, 2010) including in the governance and policy processes.

For this research, a case study was conducted in Yogyakarta to obtain in-depth understanding of renewable energy governance processes. Yogyakarta was chosen as the location for the case study because it is the most progressive province in Indonesia in terms of developing renewable energy, as indicated by the initiative of the provincial government to establish local regulations regarding renewable energy. This makes Yogyakarta the only province in Indonesia that has adopted specific regulations for the purpose of promoting renewable energy development. The other reason is that Yogyakarta has the best governance index in Indonesia (Kemitraan, 2013). However, governance conditions can be quite different in the energy sector, when compared with governance processes more generally. Therefore, it is fruitful to investigate whether effective governance practice affects the development of renewable energy.

The objectives of this research are:

1. To investigate the current governance practices of renewable energy development at subnational level in Indonesia using Yogyakarta as a case.

2. To evaluate the levels and impacts of transparency and public participation that are involved in the renewable energy development process.
3. To identify barriers to effective transparency and public participation
4. To develop a governance framework that enables greater levels of transparency and public participation in the governance process in the renewable energy sector

1.5 Research Questions

The following research questions are identified in order to achieve the research objectives:

(i) To what extent is the decision-making process in the renewable energy sector transparent to stakeholders?

(ii) To what extent does the decision-making process in the renewable energy sector involve people's participation and how?

(iii) What are the challenges to effective transparency and public participation?

(iv) How can governance practices be improved to enhance renewable energy development?

1.6 Significance of the Research

This thesis is important to investigate and conceptualise the relationships between transparency, public participation and renewable energy development. A case study was conducted in order to provide empirical evidence and to explore in-depth the role of transparency and public participation in renewable energy governance in Indonesia. Theoretical and practical dimensions were thoroughly examined. The significance of the research is explained as follows.

First, the research will add to the literature on governance and renewable energy development by providing new empirical evidence that is relevant to this topic. This study focuses on two governance indicators, namely transparency and public participation. These two governance indicators are not examined in the existing literature on renewable energy governance, particularly within the Indonesian context.

Second, despite the Indonesian government's pledge to develop renewable energy and to increase the availability of renewable energy sources, the progress towards these goals has been very limited. The ambitious target set by the National Energy Policy was not followed by supportive policies and programs as the current governance approach tends to favour the fossil energy industry. This thesis argues that the current governance process is insufficient to support the transition towards renewable energy. The findings of this research will therefore be fruitful for the future of energy governance in Indonesia.

Lastly, this study involves qualitative research which will complement other research conducted through quantitative approaches. A case study enables the researcher to focus on the dynamics of particular conditions by utilizing multiple investigators and data types such as interviews, observation, documentary analysis, and reports (Creswell, 2013; Eisenhardt, 1989). A qualitative approach allows the researcher to obtain an in-depth understanding of the complexities of renewable energy governance in practice which may not be effectively captured by a quantitative approach.

1.7 Thesis Structure

This thesis consists of eight chapters. This chapter provides the background of the thesis and a review of the literature on renewable energy governance in Indonesia. The problematic condition of current governance practice is briefly explained as the basis for establishing the research question and objectives of the thesis.

Chapter 2 elaborates a range of key concepts related with various aspects of renewable energy. It elaborates the concepts of sustainable development and renewable energy as a common good. Furthermore, it discusses a range of literature on governance, transparency, and public participation.

Chapter 3 discusses the experiences of other countries in terms of renewable energy governance. In addition, an analytical framework to investigate renewable energy governance in Yogyakarta is proposed.

Chapter 4 presents research methods utilized to examine transparency and public participation during the policy making process and the development of renewable energy projects. It provides a justification for the use of qualitative methods including the case study approach, data collection process and data analysis.

Chapter 5 provides a profile of the Special Region of Yogyakarta. General information about administration, governance, cultural, civil society and politics will be presented to provide a context for investigating renewable energy governance practices in Yogyakarta.

Chapter 6 presents the data and information collected during the fieldwork in Yogyakarta regarding the governance process of renewable energy. Four cases will be presented -- two cases of the policy making process and two cases of the development of renewable energy projects. The stages of each case are presented in chronological order. Furthermore, this chapter attempts to unfold the perspectives of and the interrelationships among the actors within the energy system. Examining the diverse perceptions and understanding of all stakeholders will help us to understand the barriers and challenges that governments face in improving renewable energy development in Indonesia.

Chapter 7 presents research findings and evaluates the level of transparency and public participation. The evaluation process is examined from the perspectives of both process-

based and outcome-based evaluation. Factors that hamper the implementation of effective transparency and public participation are also analysed.

Chapter 8 presents a summary of key findings, identifies the policy implications of the research and provides a conclusion. The policy implication section will discuss the way forward. It examines how transparency and public participation can be integrated into the governance process. It also explores how the environment for a more collaborative governance process can be fostered.

CHAPTER 2
KEY CONCEPTS AND THEORETICAL PERSPECTIVES

2.1 Introduction

This chapter aims to establish a conceptual framework for this study. It presents a review of the literature dealing with various aspects of renewable energy, with a focus on transparency and public participation.

This chapter consists of four major sections. It starts by elaborating the concept of sustainable development and examining the extent to which the current development system is unsustainable and incapable of advancing the development of renewable energy. Further, renewable energy is conceptualized as a common good which also suggests the need for a new form of governance to achieve a sustainable future.

In the next section, the discussion continues by elaborating the concept of governance. A number of governance modes are reviewed for the purpose of exploring the extent to which different governance modes were utilized in the development of renewable energy. The modes of governance that are discussed include the following: centralized, decentralized, privatisation, the commons and the collaborative governance model. As Indonesia has adopted a decentralized system of governance, this study examines the debate about whether decentralization can be effective in transforming an energy system toward renewable energy. The discussion then moves to cover the concept of 'good governance' and 'good enough governance' in order to shed light on the concept of an 'ideal' state of governance. This section also stresses the importance of transparency and public participation to support a better governance process for a sustainable future.

The concepts of transparency and public participation are further discussed in sections 3 and 4 respectively. These sections will elaborate the definition, elements, significance and

criticisms of transparency and public participation. Both sections also highlight the roles that transparency and public participation can play in developing renewable energy governance.

2.2 Sustainable Energy for All

The importance of renewable energy for building a sustainable future has been recognized globally. The United Nations (UN) has included renewable energy as part of the Agenda 2030 for sustainable development, as set out in the Sustainable Development Goals (SDGs) which comprise 17 development areas. The concern about energy is specifically addressed in the SDGs agenda number 7 which encompasses three main targets: (1) ensure universal access to affordable, reliable and modern energy services, (2) increase substantially the share of renewable energy in the global energy mix and (3) double the global rate in energy efficiency (The United Nations (2016).

This section discusses the role that renewable energy can play in achieving a sustainable future. It discusses how the world's current development system is largely unsustainable due to the fact that it prioritises economic factors within the development process and overlooks its social and environmental aspects. This section also frames renewable energy as a common good. That means that while it is an essential element for modern societies, renewable energy should also be made available and beneficial for all. Framing renewable energy as a common good will enable us to understand why energy governance needs to be buttressed by greater transparency and public participation.

2.2.1 Sustainable Development

Brundtland et al. (1987), in *"Our Common Future"* report, define sustainable development as development that is not only concerned about meeting the needs of the present generation but also with maintaining stocks or resources for future generations. Sustainable

development is also often described as fitting together the three interconnected rings of development, namely the social, economic, and environmental, in a balanced way (Giddings, Hopwood, & O'brien, 2002).

However, the world's current development system is far from sustainable. The economy has been prioritized at the expense of social and environmental considerations. Gross Domestic Product (GDP), which mainly measures market production, has been widely used as a benchmark for countries development as if it reflects people's wellbeing (Stiglitz et al., 2010). The utilization of GDP for measuring development indicates that economic growth is the main goal for countries and that accordingly, national governments should have as their main policy priority the achievement of economic growth.

Borrowing from Boulding (1966), the current world system can be described as a "cowboy economy". This term describes an open economic system in which it is perceived that there are no limits to growth. Such a development system focuses on profit at the expense of people and the environment and it views all resources including human nature (fear, dreams or genes), natural resources and the functioning of the state as being subject to commodification (Leys & Harriss-White, 2012).

Steffen et al. (2011) argue that we are now entering the Anthropocene era, in which human activities may significantly disrupt the earth's regulatory systems. The use of fossil fuels and polluting industrial processes, for example, have detrimental effects on the Earth's bio-geophysical systems. They cause deforestation, changes in weather patterns, extreme weather events, crop failure, unprecedented sea level rise and so on.

Max-Neef (1992) asserts that GDP may fail to depict and to be coherent with actual conditions which cannot be captured by statistical figures in GDP. He explains that GDP is just a number that does not mean anything when you meet poor people in daily life. In fact, the use of GDP as a development indicator has instigated more resource exploitation and consumption.

The current development system should be modified into more sustainable ways. McIntyre-Mills (2017) suggests that the system that seeks profit at the expense of people and the environment is a core problem of democracy and governance. The current "cowboy economy" needs to be transformed into the "spaceman economy", a system that portrays the earth as a spaceship, a closed system which has limited reservoirs for either extraction or pollution generated from human activities (Boulding, 1966). Hence, the development system should promote a continuous reproduction of material form to minimize energy inputs which is possible with the advancement of technology (Boulding, 1966). He also notes that production and consumption are not the only factors that determine the success of an economy; human well-being and nature should also be factored into measuring sustainability.

Stiglitz et al. (2010) in "Mismeasuring Our Lives" also point out that we need to rethink the objectives of development and that development indicators should be broadened so that they can measure human wellbeing rather than just economic performance. Eight dimensions of wellbeing are identified as follows: 1. Material living standards (income, consumption and wealth), 2. Health, 3. Education, 4. Personal activities including work, 5. Political voice and governance, 6. Social connections and relationships, 7. Environment (present and future conditions), 8. Insecurity (Stiglitz et al., 2010, p. 15).

Moreover, Amartya Sen (1999) and Nussbaum (2011) associate the concept of sustainable development with the enhancement of humans' basic capabilities. With his "capabilities approach", Amartya Sen (1999) argues that the purpose of sustainable development is essentially to enhance individual freedom so as to enable people to achieve their potential for doings and beings. This includes the freedom to make decisions and to get involved in public policy processes. Nussbaum (2011) further elaborates the concept of capabilities by

constructing a list of ten capabilities[3] that determine human wellbeing. She also included the individual rights of humans to have a voice and to participate in decision making processes and she argues that the government should guarantee this right. In addition, she addressed the concern regarding the environment as the eighth capability.

In order to promote sustainable development, economic growth should be guided by the goal of promoting the common good. Castiglioni, Lozza, and Bonanomi (2019) assert that the promotion of the common good in the development system can steer economic activity toward inclusive participation, thereby enabling individuals to align their needs with the needs of larger society and in so doing to promote sustainable development. Further, Felber (2019) notes that treating a commodity as a common good can reorient the development system away from profit maximisation and market domination towards sustainable development and thereby promote human rights, justice, and sustainability. Thus, the following section will discuss the different types of goods and explain why renewable energy should be framed as a common good.

2.2.2 Renewable Energy as a Common Good

This section elaborates on the types of goods and recognizes renewable energy as a common good. This framing is relevant as it will help to show the influence governance and institutional arrangements can have on enhancing renewable energy development.

[3] The ten basic capabilities are: (i) Life: to have the ability to enjoy living until normal age or longevity; (ii) Healthiness: adequate food, clothing, shelter, and healthy living; (iii) Feeling Secure: have the ability to travel freely, free from crime and also free from domestic violence; (iv) creativity: have the ability to expand their knowledge, free to express their mind in terms of political, religious, artistic, and so forth; (v) Emotions: have the ability to express emotions like love, grief, desire, and also anger; (vi) Practical reason: to have the ability to use reason to decide how to act; (vii) Social interaction: to have the ability to affiliate with other human beings, or to form a group, without feeling scared of discrimination of race, sexual orientation, religion, caste, ethnicity, and so forth; (viii) Nature: have the ability to pay attention and give concern to animals, plants, and natural environments; (ix) Relaxation: to have the ability to play, laugh, and have fun; and (x) take control on their immediate environment: have the ability to have a political stand, free speech, to hold a property, to have equal treatment in social life, and mutual recognition with other people. (Nussbaum, 2011, p.33-34)

There are four types of goods that are commonly used: public goods, private goods, club goods, and common goods (Hess & Ostrom, 2003; McNutt, 1999). This classification is based on the aspects of 'excludability' and 'rivalry' in consumption. Samuelson (1954) defines a public good as a good that possesses the properties of both non-excludability and non-rivalry in consumption. Non-excludability means that everyone can use the goods, while non-rivalry indicates that consumption by individuals will not reduce the amount consumed by others. Some examples of public goods are common knowledge, public information and particular types of public infrastructure such as a lighthouse. Thus defined, the property of 'non-excludability' might cause the 'free rider' problem where someone who does not contribute might also benefit from the goods (Hess & Ostrom, 2003; McNutt, 1999).

Furthermore, when access to public goods is restricted, the goods then can be classified as club goods. Club goods are characterized by minimum or no excludability but still without rivalry in the consumption (Hess & Ostrom, 2003; McNutt, 1999). Access to club goods is restricted to members of the club, but outsiders can have access if permitted by the club. Satellite TV, cinemas and private parks are examples of club goods.

In contrast to public goods, private goods are retained by those who can afford the cost of provision. These goods are priced by the market mechanism based on the law of supply and demand. B. L. Benson (2017) identifies the characteristic of private goods as follows: excludability, not necessarily rivalrous for those who obtain permission for access, hence non-owners must pay for utilization, and private provision can occur if it is allowed and profitable.

Common goods are sometimes called common-pool resources and are characterized by rivalry and low excludability in consumption (Hess & Ostrom, 2003). Similar to public goods, low excludability means almost all people have access to the goods. However, unlike public goods, there is a rivalry in consumption because their utilization by one individual diminishes

the benefits obtained by other individuals or what Ostrom (1990) calls subtractability. Wide access to the resource and its subtractability lead to negative externalities such as congestion, overuse or exhaustion otherwise known as 'the tragedy of commons' (Hardin, 1968). Common goods are usually natural resources such as fisheries, mining and forest.

Renewable energy can be perceived as a common good. Helfrich (2012) proposes three reasons why this is the case. The first reason is that most renewable energy originates from natural resources such as wind, solar, hydro and geothermal. Almost everyone has access to the goods but there is rivalry in the consumption. Second, energy is perceived as being an essential element for human life. Hence it is a common good. In a similar vein, McIntyre-Mills (2017) argues that energy, among other elements such as water, air, and earth, is vital for human wellbeing, hence humans depend on its availability. Lastly, renewable energy is a global common good. The transition from fossil fuel to renewable energy can decrease the amount of carbon released into the atmosphere and thereby mitigate climate change risks.

Recognizing renewable energy as a common good will have important implications for how renewable energy should be provided and managed. Blanchet (2016) argues that relocating renewable energy as a common good will highlight the urgency of finding sustainable energy options and is expected to improve the development of renewable energy. As a common good, renewable energy is perceived as being an essential element of human well-being. In this regard, drawing on the work of Nussbaum (2011), the government needs to ensure that all citizens have access to renewable energy at a threshold level (i.e. sufficient to fulfil people's basic needs). This characterization provides a non-anthropocentric perspective by highlighting the importance of protecting environmental sustainability and stocks for future generations, hence it could politically transform the way in which we manage resources.

2.3 Governance

2.3.1 Definition

Traditionally, the term “governance” was viewed as a synonym for “government”. Kjaer (2004) suggests that governance is the capacity of government to formulate and implement policy or to steer society while Lynn Jr (2012) argues that governance is the state’s action in governing society.

However, the concept of governance has a broader connotation than government. In the early 1990s, the meanings of “governance” began to be widely discussed by scholars (Lynn Jr, 2012). The notion of governance has become a very fashionable concept and has been applied in different fields of study such as economics, public administration, management, political science, social science, business, finance, environment and planning and development. Hence, the concept of governance has been conceptualized in many different ways (Stoker, 1998).

There is no single agreed definition of governance. The diversity of meanings stem from differences in the frame of analysis, the observer’s perspective and the focus of observation (Edwards, Halligan, Horrigan, & Nicoll, 2012). In addition, Bevir (2010) asserts that the diverse meanings of the governance concept arise because it focuses on the processes and interactions of state and non-state actors, something which evolves over time and which differs between countries. The concept of governance involves the interaction between formal institutions and those of civil society (Weiss, 2000). It signifies the increased involvement of other actors beyond public institutions in delivering public services and in engaging in the public decision-making process (Stoker, 1998).

In more practical terms, international development institutions such as the World Bank, the International Monetary Fund (IMF), and the Organisation for Economic Co-operation and Development (OECD) conceptualise governance as a tool for improving public administration

with a specific concern about its social and economic aspects. The World Bank defines governance as:

> *"The manner in which power is exercised in the management of a country's economic and social resources, with three distinct aspects including: (i) the form of a political regime; (ii) the process by which authority is exercised in the management of a country's economic and social resources for development; and (iii) the capacity of governments to design, formulate, and implement policies and discharge functions." (World Bank, 1994, p. xiv)*

While the IMF describes good governance as:

> *"Ensuring the rule of law, improving the efficiency and accountability of the public sector, and tackling corruption." (IMF, 1997, p. v)*

In similar vein, OECD describes governance as a concept that denotes:

> *"The use of political authority and exercise of control in a society in relation to the management of its resources for social and economic development." (OECD, 1995, p. 14).*

Another perspective on governance concept is provided by the UNDP which describes governance as mechanisms, processes, and institutions. The UNDP defines governance as:

> *"The exercise of economic, political and administrative authorities to manage a country's affairs at all levels. It comprises mechanisms, processes and institutions, through which citizens and groups articulate their interests, exercise their legal rights, meet their obligations and mediate their differences" (UNDP, 1997, p. 7)*

In addition, Fukuyama emphasises that governance is about the execution of public action which falls mainly under the domain of public administration as opposed to politics. Hence, a government's capacity is the central element for defining governance. He defines governance as:

> *"A government's ability to make and enforce rules, and to deliver services, regardless of whether that government is democratic or not." (Fukuyama, 2013, p. 350)*

He adds that the capacity for governance entails the need for a certain degree of autonomy or discretion among the multiple components of the state so that they can make judgements that enable them to achieve the highest quality of government and administration. However, the interaction between capacity and autonomy constitutes an optimum point, where too

much autonomy can harm governments just as too little capacity can lead to dysfunctions (Fukuyama, 2013).

Interestingly, Fukuyama (2013) excludes democracy from his definition of governance. He states that an authoritarian system can be well governed while a democracy can be mal-administered. The recognition that such factors as public values and engagement, the rule of law and equal opportunity, for example, are elements of good governance, shows how the latter can underpin democracy. In addition, Filgueiras (2018) notes that governance has become a driver for the democratization process by allowing for the incorporation of new social capacities, greater connection with social movements and the empowerment of citizens.

Having explored various definitions of governance, it can be said there is a common ground among them in terms of what they see as being its essential feature. The contemporary interpretation of Governance, as Daly (2003) argues, is fundamentally about change. It signifies a change in the meaning of government, one which refers to the new processes or methods by which society is governed (Rhodes, 2012). The changes have an impact on at least three dimensions of government systems or modes: the structure, the process and the mechanism. A structure refers to the design of formal and informal institutions. Contemporary governance theory seeks to incorporate the role of wider societal actors than just elected officials and bureaucrats; governance actors are all those who can affect the legitimacy and impact of public policy (Kooiman, 1999). It involves a group of people or multiple organisations by which rules are enforced to attain intended purposes (Bovaird & Löffler, 2015; Florini & Sovacool, 2009). As a result, the policy arena has become more crowded. The boundaries between public and private have become blurred and government determination has been transformed (Osborne, 2010).

Furthermore, the term governance can be conceptualized as a process. Levi-Faur (2012, p. 10) notes that governance is the process of steering or enhancing the institutional capacity to steer and coordinate. Likewise, Bovaird and Löffler (2003) see governance as the interactions between different organisations to achieve better outcomes. The United Nations Development Programme (UNDP) also views governance as a process when it defines governance as the “exercise” of economic, political and administrative authorities (UNDP, 1997, p. 6).

Governance also transforms the mechanism of the decision-making process as well as the steering of society. In this regard, as wider actors are involved, the concept of governance suggests the shift of power. As Stoker (1998) observes, the concept of governance also refers to the blurring of boundaries and responsibilities in dealing public issues where power is distributed among the different institutions involved in collective action. Moreover, Burns and Stöhr (2011) adds that the powers are distributed between multiple agents according to formal and informal rules.

Treib, Bähr, and Falkner (2007) suggest that various meanings of governance can be viewed from three perspectives: politics, policy, and polity. From the perspective of politics, the concept of governance is focused on power relations between the actors involved in the policy making process. This perspective highlights the extent of power sharing between public and private actors in policy making. Second, the polity perspective perceives governance as being a set of rules that determines how social actors act. This perspective views governance in terms of institutional settings. Lastly, the policy perspective is concerned with the instruments used to achieve certain policy objectives. For example, the state can choose whether it should use soft or hard law, market based or hierarchical mechanisms for implementing a particular policy.

2.3.2 Governance Modes

The concept of governance has highlighted a new way to govern where responsibilities for policy delivery are shared between the government, market and civil society. As a result, a variety of modes of governance have been identified in the literature.

Several authors have identified various modes of governance based on different aspects or dimensions. For examples, Hysing (2009) provides a framework of governance modes comprising a continuum which is based on the intensity of the state's intervention. The governance modes are further divided into three dimensions as can be seen from Table 2.1. The first dimension comprises governing styles and instruments which range from the exercise of sovereign rule by the central government as the primary governing mechanism to voluntary instruments. The second dimension highlights the relationships between public and private actors. When state intervention is high, the modes of governance are characterized by monocentric and hierarchically organized political institutions as the prime governors of society. At the other end, where boundaries between the public and private spheres of society become blurred (Stoker, 1998), the governance modes feature networks of self-governing private and voluntary actors. *The last dimension* concerns the relations between policy levels. Here, the governance modes range from the state as the central locus of authority to the condition where actors and institutions on different levels operating autonomously from the state and have the capacity to circumvent the national level in policymaking.

Table 2.1: The Continuum Modes of Governance

Dimensions	State intervention ⟷				Societal autonomy
Governing instruments and styles	Command and control (legal sanctions)	Incentive-based instruments (taxes and grants)	Delegated public functions	Information instruments	Voluntary instruments (agreements and labelling)
Public–private relationships	Hierarchic relationship	Institutionalized public private relations (state domination)	Facilitation and enabling of networks	Mutual dependency of networks between private and public actors	Private self-governing
Policy levels	National state governing	Delegation of authority and responsibility to other levels	Gatekeeping (governing in implementation)	Multilevel governance (circumventing the national level)	Governing by a global civil society

Source: Hysing (2009, p. 650)

Another typology is provided by Driessen, Dieperink, van Laerhoven, Runhaar, and Vermeulen (2012) who differentiate various governance modes according to the level of involvement of state and non-state actors. Their typology divides governance modes into several categories, namely: *centralized* and *decentralized*, where public sector agencies are the main actors; *public private governance* and *interactive governance* which involve the collaboration of governments, market actors and civil society on equal terms; and *self-governance,* where market actors and civil society are autonomous and are able to initiate new approaches.

The typologies proposed by both Hysing (2009) and Driessen et al. (2012) share a similar starting point in as much as they differentiate the various modes of governance according to the degree of involvement of state or non-state actors. Based on these typologies, several governance modes in relation to renewable energy development can be identified as follows:

2.3.2.1 Centralized Model

Centralized governance is perceived as being a hierarchical method of governing where the power is concentrated at the national level (Homsy, Liu, & Warner, 2019). Centralized governance is also known as the top down approach or one in which the central government acts as the initiator and holds the authority to implement policies and to determine governance strategies (Driessen et al., 2012). Furthermore, L. González (2012) notes that in a centralised system, the state has the power to structure political, economic, and social aspects of a country.

In regards to this study, some authors have argued that a centralized or top down approach has certain advantages when addressing environmental problems. Mann and Gennaio (2010) argue that a centralized approach provides for greater efficiency and lower transaction costs. This is because it adopts a standardized mechanism or procedure across all governance levels which prevents contradictory policies from being pursued across institutions and government levels. Furthermore, Hare, Stockwell, Flachsland, and Oberthür (2010) emphasise that a strong and effective top-down approach provides actors with greater confidence to act collectively. They further maintain that a legal binding framework must be put in place to ensure that stakeholder's interests are addressed fairly in order to enhance commitment from all stakeholders.

On the other hand, various scholars have argued that the centralized approach is ineffective for the purpose of solving the collective action problem. Diringer (2011) and Helm (2012) for example, point to the failure of a top-down approach to securing climate change agreement, as exemplified by the case of the Kyoto Protocol. Grunbaum (2015) argue that the lack of participation from all parties has been among the main reasons that that the Kyoto Protocol failed to provide a comprehensive and effective solution for mitigating climate change.

The other concerns regarding the centralized approach relate to the issue of fairness. Weinrub and Giancatarino (2015) argue that a centralized renewable energy model is the product of concentrated financial and economic power rather than of democratic actions. This approach tends to serve only the interest of the 'haves' and the powerful rather than that of local communities and the 'have nots'. In addition, it can derail the effort to achieve sustainable development by placing social and environmental concerns behind those of profit-making.

2.3.2.2 Decentralized Model

Despite its promising potential, many dispute whether decentralization can actually address complex issues such as renewable energy. This is because the potential benefits of decentralization are limited by such factors as the absence of resources, capacities, expertise, staff motivation and proper leadership (E. D. Brown, Cloke, & Harrison, 2015) and the presence of corruption and misconduct among local officials (Cohen, Peterson, & Peterson, 1999). Furthermore, Blair (2000) notes that when exercising power, local elites are likely to favour their own interests. Hence instead of yielding greater levels of efficiency, decentralization can promote increased corruption and yield perverse results (Asthana, 2012).

Reflecting the failure of a centralized or top-down approach, many national governments and multinational agencies have begun to undertake decentralization. By the 1990s, around 85 percent of developing countries had initiated decentralisation reforms (Dillinger, 1994). Their reasons for initiating such reforms vary. In some countries decentralisation is seen as a counter-reaction to strong centralized or authoritarian systems while in other countries, decentralisation is perceived to be an instrument to improve public service efficiency, to create a more accountable public governance, to decrease levels of corruption and to foster higher levels of political participation (OECD, 2020).

In the literature, the concept of decentralization is widely acknowledged as referring to the transfer of authority from central government to other agencies. World Bank (2008) refers decentralization as the transfer of authority for public functions from the central government to intermediate and Iocal governments or quasi-independent government organizations and/or the private sector. Rondinelli (1999) argues that the transfer of authority has occurred from central government to: field units of central government ministries or agencies, subordinate units or levels of government, semi-autonomous public authorities or corporations, area-wide regional or functional authorities; or NGOs (Non-governmental Organizations)/PVOs (Private Voluntary Organizations). Martinez-Vazquez and McNab (2003) focus in particular on the transfer of power from central government to sub-national governments. This transfer of authority empowers local governments with the autonomy to manage and allocate their resources effectively (Costa-Font & Greer, 2016).

According to Cheema and Rondinelli (2007), decentralization can be classified into four types. The first is political decentralisation which is characterized by increasing citizen participation in selecting political representative and decision-making process. The aim is to empower citizens and the local elected representatives when formulating public policy at the local level. The second type is administrative decentralization. This concerns the delegation of authority and responsibility from central government to governments at lower levels. It seeks to transfer responsibilities for delivering public services to local administrators or bureaucrats. The third type is fiscal decentralization. This involves sharing the authority and responsibility in fiscal matters including raising revenue and expenditures allocation. Revenue decentralization concerns the authority to collect local revenues, to set tax rates, and to settle loan agreements, while expenditure decentralization mainly concerns the level of autonomy in formulating spending budget (Bahl, 1999). And lastly, economic decentralization is a process in which the authority and responsibility for delivering public

services is transferred to the market through such mechanisms as privatisation, deregulation, market liberalisation and public private partnerships.

The benefits of decentralisation have been noted by many scholars. Faguet (2014) sees such benefits as occurring when governance processes are improved. Examples of such improvement include: improving accountability and responsiveness, reducing the abuse of power, improving political stability and improving political competition by creating more political arenas. In a similar vein, M. S. Grindle and Grindle (2007) suggest that decentralization creates the foundation of good governance through strengthening political openness and public participation and by improving bureaucratic capacity and the capacity of local government to deliver public services. As a result, local authorities are perceived to be capable of effectively balancing local interests, power and resources among local actors and market and civil society organisations (Rumbach, 2016).

In relation to this study, E. D. Brown et al. (2015) argue that decentralization has particular relevance to energy problems as the complex nature of such problems requires effective governance. Furthermore, Goldthau (2014) identifies the multiple scales of such complexity including the relationships with dominant socio-economic institutions, regulatory agencies, incumbent market actors and social norms and problems concerning common pool resources. Hence, decentralization has been seen by some scholars as a superior approach in tackling collective action problems, including renewable energy development, when compared to the centralization approach.

Sovacool (2011, p. 3832) argues that the power transfer to local authorities can foster equity, inclusivity, information, accountability, organizational multiplicity and adaptability and thereby resolve climate change and energy related problems. Additionally, in terms of energy production, renewable energy such as solar power can be generated locally rather than in centralised power plants of the type used when generating coal-based electricity. In this

respect, decentralization might reduce power transmission costs and losses from the grid and thereby improve efficiency. In addition, Goldthau (2014) argues that decentralization can lead to sustainable solutions and learning across scales as it allows for contextualization, experimentation and innovation.

2.3.2.3 Privatisation Model

Privatisation is an additional means for providing better public services. Hall, Lobina, and Motte (2005) argue that privatization can boost capital power and efficiency by replacing traditional public sector systems that are inefficient and subject to excessive political interference. Hence, privatisation is the key to better government (Savas, 1987). Privatisation may also include deregulation, liberalisation and load shedding of government activities (Hodge, 2002).

However, there is a risk in transferring the authority for the provision of public services to the private sector. Privatisation might risk the accessibility and affordability of public services because it leads decision makers to focus on profit-making which may result in higher prices.

In the energy sector, Hall et al. (2005) found that privatisation is unpopular and that there have been many rejections and terminations of privatisations globally. This is because privatisation tends to lead to large hikes in the price of energy due to the fact that the private sector's main objective is profit making. The privatization of Electricity Company in South Australia, for example, resulted in a continuous increase of power prices which hurt households and businesses and was therefore considered to be a failure (Shepherd, 2014).

Furthermore, Hodge (2002) argues that governments must be extra careful when pursing a policy of privatisation as national resources are at stake. This is particularly the case for the energy sector since energy plays an elementary role in human life. Privatisation then can be a useful mechanism for governments but it can also be harmful for them as well.

2.3.2.4 The Commons

Drawing from the work of Bollier (2011), “the commons” approach advocates a governance model that empowers local people to manage or govern resources within their area. The commons is described as being a social system for the long-term stewardship of resources that preserves shared values and community identity (Bollier, 2011).

As discussed in Section 2.2.2, this study perceives renewable energy to be a common good, hence it should be made available and accessible for the people. One of the alternative modes of governance is known as “the commons”. In this mode of governance local communities are encouraged to build a system in which they are able to self-manage resources with minimal or no reliance on the market or the state. In other words, it is a grassroots, do-it-yourself, take-charge-of-our-future kind of movement.

The commons emerged as an alternative to both public and private interventions. The concept assumes that government’s intervention as a representation of people’s will is no longer credible (Bollier & Helfrich, 2012).The government system is a more or less an oligopoly of elite insiders. Corruption, collusion and lack of transparency have rendered democratic mechanisms useless in protecting public interests. Meanwhile, the market mechanism is not actually independent and private (Bollier & Helfrich, 2012). Private interests regularly gain incentives and privileges from the government through subsidies, tax concessions and legal incentives which ensure that their agendas dominate the public policy process. This has enabled a small minority to generate large profits at the expense of others, while undermining environmental sustainability.

A commons approach to energy distribution challenges Hardin’s notion of the ‘tragedy of the Commons’. Hardin asserts that resources will be overused and destroyed when they become part of the commons (Hardin, 1968). The proponents of the commons approach, such as Paysan (2012) and Bollier and Helfrich (2014), regard Hardin’s notion as being too simplistic

to describe the real condition and dynamism of life. The concept of the 'tragedy of commons' overlooks the rules and norms within the society which could possibly prevent the overuse of common resources and thereby blocks the possibility of people of working together to find a sustainable way in using resources. The commons approach, on the other hand, acknowledges these values, such as trust, reciprocity and a history of shared commitment.(Bollier, 2002).

Within the commons people strive to protect living systems as ends in themselves and do not merely treat them as being a functional 'means to an end', such as profit. The commons reframes development and wellbeing not only as a means of maximising economic success and productivity but also as a form of long term stewardship that preserves shared values, promotes equitable access, use, and sustainability (Bollier, 2011) and supports the development of building wellbeing stocks (Stiglitz et al., 2010). The energy system should not hinder people in acquiring the energy to which they are justly entitled given its fundamental role in their lives (Sovacool, Sidortsov, & Jones, 2013). As Day, Walker, and Simcock (2016) observe, energy is a valued capability that is important for the quality of life and human well-being.

Marella (2017) identifies three elements that make up the commons: resources, community and communing. Resources are usually described as natural resources such as water, land, forests, etc. or intangible things such as knowledge and information. Community refers to local community groups that have the access and authority to manage the common resources in their area. Lastly, commoning is collective action that drives people to discover, innovate, and manage the commons for themselves (Bollier & Helfrich, 2012).

The commons practice has assumed various forms such as participatory budgeting in Brazil, forestry system in Nepal, stakeholders' cooperative in Canada, farming *ejidos* in Mexico and cinema *Palazzo* in Italy (Agrawal, 2007; Bollier, 2013; Marella, 2017). In general, these

practices enhance sustainable ways in governing and more equitable access to resources by promoting active participation of local communities.

However, the way in which the commons operates can be problematic in the case of renewable energy development. Based on reviews from the scholars above, we can say that good local knowledge is required for the commons to work effectively. The local community is the main actor in the governance process since it initiates and runs the policies or programs. This can be a great challenge when the problems that such actors encounter are unfamiliar and involve advanced technology such as renewable energy. According to Nasirov, Silva, and Agostini (2015), lack of information and awareness regarding renewable energy is perceived to be a major barrier for renewable energy development. In addition, the limitation on sources of finance can also be an obstacle for the commons to work effectively.

2.3.2.5 Collaborative Model of Governance

Collaborative governance is seen by scholars as means of overcoming the limitations of a siloed system and of reversing inward-oriented cultures and ways of operating (Siddiquee & Xavier, 2020, p. 20). It is perceived to be an alternative governance approach for improving public service that can overcome the shortcomings of other modes of governance.

The concept of collaborative governance is often used interchangeably with participatory governance. While both participatory governance and collaborative governance have much in common, since they each seek to promote transparency and public participation, each concept has distinctive features. Newig, Challies, Jager, Kochskaemper, and Adzersen (2018) claim that participatory governance seeks to include actors that are not usually involved in the decision-making process while collaborative governance stresses the process of working together in synergy. Overall, the governance process seeks to engage all relevant stakeholders as well as take their views into account.

Ansell and Gash (2008, p. 544) define collaborative governance as “a governing arrangement where one or more public agencies directly engage non-state stakeholders in a collective decision-making process that is formal, consensus-oriented, and deliberative and that aims to make or implement public policy or manage public programs or assets”. While Ansell and Gash emphasise government as the primary actor in the collaborative process, Emerson and Nabatchi propose a more equal role for policy actors and describe collaborative governance as being “the processes and structures of public policy decision making and management that engage people across the boundaries of public agencies, levels of government, and/or the public, private, and civic spheres to carry out a public purpose that could not otherwise be accomplished” (Emerson & Nabatchi, 2015, p. 18). To put it simply, collaborative governance is a governing process which enables the active involvement of all relevant stakeholders when pursuing a common goal.

Several benefits of collaborative governance have been identified by scholars in terms of the opportunities that it provides for mutual learning and the sharing of experiences. Lasker, Weiss, and Miller (2001) argue that collaborative process can induce creativity, practicality and transformative thinking. Working together with diverse people and organisations encourages the exploration of different values and perspectives and thereby allows for the construction of a more holistic view of problems and of more innovative solutions to them (Lasker et al., 2001; Silka, 1999). Collaboration brings all the relevant stakeholders to the table, including the most affected parties. The decisions generated by collaboration are likely to be more grounded and pertinent as it connects science to local experiences and resources (Richardson & Allegrante, 2000). Furthermore, collaboration can be transformative. Lasker et al. (2001) maintain that as diverse stakeholders interact, their different assumption and methods are exposed and that this process can influence how others perceive the problem and deal with it. In this regard, collaborative governance provides mutual gains for the various

stakeholders. Such gains include improving their understanding of and trust in other stakeholders, allowing them to pool their knowledge and information, enhancing the efficiency and effectiveness of coordination and improving the legitimacy of decisions (Ansell, 2012). All of these gains can promote better policy implementation and public service.

Despite the potential benefits of using collaborative approaches, some challenges can be identified. Huxham and Vangen (2013) argue that collaborative processes are time consuming and require extensive resources, hence they should only be undertaken when they are absolutely necessary. Likewise, Ansell and Gash (2008) argue that a collaborative process is not suitable for every public policy problem, particularly when agencies must make decisions quickly. Other challenges identified by Wanna (2008) are those of ensuring political and ministerial buy-in to arrangements of additional complexity and the blurring of lines of accountability that can occur when many actors are involved in the process. Therefore, Booher (2004) suggests that potential participants in collaborative governance should carefully consider whether the benefits of collaboration can outweigh the significant costs.

In order to obtain maximum benefit, Ansell and Gash (2008) identify key elements that are crucial for collaborative process. These include face-to-face dialogue, trust building, the development of commitment and shared understanding. Face-to-face dialogue is important for breaking down stereotypes and other obstacles to communication that can hamper exploration of mutual gain (Bentrup, 2001). It enables the participants within the collaborative process to learn new ideas and to recognize the perspectives of others. Hence, participants can work through issues and create shared meanings as well as the possibility of joint action (Innes & Booher, 2004). However, Emerson, Nabatchi, and Balogh (2012) argue that face to face dialogue is not always essential, other settings for dialogues, such as virtual formats or public meetings, can also be conducted. Such settings are especially useful when conflict is low and shared values and objectives quickly surface. Furthermore, the collaborative process

is not simply about negotiation, it is also about building trust among stakeholders. To build trust, it is important to engage all participants in authentic dialogues in which all are equally empowered and informed and in which a common understanding between participants can emerge (Innes & Booher, 2004). Another factor that determines the success of the collaborative process is commitment. Commitment to the process means developing a belief that good faith bargaining for mutual gains is the best way to achieve outcomes (Burger et al., 2001). It enables the participants to work together across boundaries and commit to a shared path (Emerson et al., 2012). Additionally, commitment to the process requires that participants be willing to abide by its results even if they are not really in their interest (Ansell & Gash, 2008). The last element is shared understanding, a shared set of values of goals that participants agreed on.

In relation to this study, it has been recognised that collaborative governance is important for dealing with environmental problems such as water management (D. Benson, Jordan, Cook, & Smith, 2013; Lubell, Leach, & Sabatier, 2009), forestry (Johansson, 2018) and renewable energy development (Gailing & Röhring, 2016; Lebo, 2019). In general, collaborative governance is seen to be an effective mechanism for addressing complex problems as it promotes learning among diverse participants which enables them to develop creative, consensus-oriented environmental management actions (Koebele, 2019). Of particular relevance for renewable energy development, collaboration among stakeholders can help to develop effective energy strategies, improve coordination between stakeholders and overcome limitations of resources (Lebo, 2019).

2.3.3 Good Governance

In addition to seeking to define governance, scholars and organizations have also sought to identify how it can be improved. This has led them to develop a model of an ideal form of governance or what has come to be known as “good governance”. The concept of good

governance was originally used by the World Bank in the Sub-Saharan Africa Report published in 1989. Responding to a weak economic performance and failure of public institutions, the former president of World Bank, Barber Conable emphasised the importance of "good governance" and defined the term as:

> *"Public service that is efficient, a judicial system that is reliable, and an administration that is accountable to its public." (World Bank, 1989, p. xii)*

Subsequently, the term good governance has been discussed by scholars and organizations as part of their ongoing quest for establishing governance systems that work well. Different authors have emphasised different elements or principles of good governance.

Rothstein (2012) views good governance in relation to the provision of public goods by public sector institutions. Hence, good governance is closely related to the effort to enhance public sector performance. Brinkerhoff and Brinkerhoff (2015) summarized what good governance should entail in public sector performance:

> *"delivering quality services with fewer resources to diverse populations of users, partnering effectively with the private and non-profit sectors, responding flexibly and rapidly to shifts in demands and needs, assuring citizens' safety and security, stimulating widespread and equitable economic growth and opportunity, and coping proactively with transnational threats."* (Brinkerhoff & Brinkerhoff, 2015, p. 222)

Elahi (2009) likewise perceives good governance as being the processes and structures that guide political and socio-economic relationships. Similarly, Pierre and Peters (2019) argue that in many cases, good governance requires collaboration with other actors. In this regard, Elahi (2009) argues that such elements as public participation, transparency, rule of law and responsiveness should be part of good governance.

Several principles of good governance have been identified within the literature. Kaufmann, Kraay, and Mastruzzi (2008, p. 1) identify six indicators that determine the quality of governance, namely voice and accountability, political stability and the absence of violence/terrorism, government effectiveness, regulatory quality, rule of law and control of

corruption. The ADB specifies the elements of good governance as follows: accountability, participation, predictability and transparency (ADB, 1999). In addition, the UNDP claims that there are three main principles of governance, namely: (i) participation and inclusion which emphasises free, active, and meaningful involvement in decision-making processes; (ii) accountability and the rule of law which determine the level of public participation; (iii) non-discrimination and equality which includes power inequalities and unequal benefits of development particularly for vulnerable people (UNDP, 2011, p. 279).

The importance of good governance for securing better public service delivery has been established in the literature. The elements of good governance have also been identified. However, some scholars have noted that the concept of good governance is almost impossible to achieve, hence there should be a more realistic target for better governance processes or what M. S. Grindle (2004) terms “good enough governance”.

2.3.4 Good Enough Governance Model

Following the discussion of the good governance concept, some criticisms and concerns were raised. Good governance is perceived as being too “sophisticated” and therefore impractical, particularly for developing countries. The overwhelming tasks that actors face in achieving good governance were identified by Merilee Grindle, who states that:

> *“Getting good governance calls for improvements that touch virtually all aspects of the public sector—from institutions that set the rules of the game for economic and political interaction, to decision-making structures that determine priorities among public problems and allocate resources to respond to them, to organizations that manage administrative systems and deliver goods and services to citizens, to human resources that staff government bureaucracies, to the interface of officials and citizens in political and bureaucratic arenas. Getting good governance at times implies changes in political organization, the representation of interests, and processes for public debate and policy decision making. Not surprisingly, advocating good governance raises a host of questions about what needs to be done, when it needs to be done, and how it needs to be done.” (M. S. Grindle, 2004, pp. 525-526)*

In a similar vein, De Vries (2013) argues that the good governance concept is burdened with extensive indicators that make it extremely difficult to attain in practice without neglecting the

societal effects of governmental actions. M. Grindle (2012) sees the concept of good governance as a mighty beacon that can guide governments in the road ahead. It is something that developing countries in particular cannot acquire without adequate resources, institutional capacity, political support and social conditions (Bettcher, 2017). In other words, the good governance agenda is too ambitious and overloaded, particularly given the limited resources available to developing countries.

An alternative concept was then advanced which attempts to improve governance practice by taking account of different countries' context rather than adopting a "one-size fits all" approach. For example, M. S. Grindle (2004) introduced the notion of *"good enough governance*" and described the concept as:

> *"A condition of minimally acceptable government performance and civil society engagement that does not significantly hinder economic and political development and that permits poverty reduction initiatives to go forward."* (M. S. Grindle, 2004, p. 526)

She has developed this idea by constructing a classification of governance interventions that set the priorities for action based on the state's capacity (M. S. Grindle, 2007). A typology of states was constructed that comprised five categories: collapsed states, personal rule, minimally institutionalized states, institutionalized non-competitive states, and institutionalized competitive states. She argues that the extent of a state's order and functionality of government are more important for less institutionalized countries, whereas other interventions such as transparency, accountability, public participation, responsiveness are more relevant for institutionalized countries.

In a similar vein, Levy (2015) developed a "good-fit" approach and constructed a typology that categorizes countries as follows: dominant discretionary, rule by law dominant, personalized competitive and rule of law competitive. This typology allows a more effective comparison of like-with-like and thereby allows for the identification of better targeted and more effective options for governance reforms (Levy, 2015, p. 238).

While incorporating the political and economic context is important to determining what intervention might effectively work for a particular country, the governance approach should also consider the nature of particular problem faced by the government. This idea is proposed by Andrews, Pritchett, and Woolcock (2013), known as the Problem Driven Iterative Adaptation (PDIA) approach. This approach focuses on problems and advocates a step-by step process (experimentation and trial and error) that allows for experiential learning in the pursuit of improved public sector performance. PDIA also emphasises the importance of public participation by involving multiple stakeholders from across various sector and organisations, particularly local actors, to ensure that reforms are viable, legitimate, and relevant (Andrews et al., 2013, p. 235).

The need to ensure public participation in the governance process is greatly relevant to this study. Valkenburg and Cotella (2016) argue that transitioning the existing energy system toward renewables is a complex problem as it involves multiple interests and different actors. Involvement of such actors through public participation can improve the quality of decision making by providing the necessary information and knowledge to decision makers, enabling them to logically identify problems and their causes and to gain support from stakeholders (FHJM Coenen, 2009; Jami & Walsh, 2014).

Inevitably, public participation in governance requires a certain degree of transparency. Meaningful public participation cannot take place without adequate information about the problems being faced. Transparency is vital to good governance as the right to be informed and to obtain access to information is essential in modern society (Goede & Neuwirth, 2014). It enables the public to understand what is being decided and why (Drew & Nyerges, 2004). Scholars, policymakers and activists have called for greater transparency in various contexts including renewable energy development as the visibility of information provides a means of detecting and correcting errors (Florini, 1999). In addition, transparency has been identified

as a key factor for improving trust and establishing good relationships that enhance the synergy between actors (Grimmelikhuijsen, 2012b).

This study focuses on two elements of good governance, namely transparency and public participation. The role that both elements can play in enhancing good governance and in supporting the development of renewable energy development has been recognized in the literature. As mentioned previously, renewable energy development is a complex problem which requires collective action from all of the relevant stakeholders based on shared goals. Therefore, effective collaboration is vital. In this regard, transparency is seen to be the key precondition for establishing effective collaboration among energy stakeholders. Ansell and Gash (2008) argue that transparency is required from the beginning of the governance process, with respect to when and how these decisions will be made, by whom and with what input from whom else. Furthermore, the need for public participation is quite obvious. When dealing with complex problems that require collective action, active and meaningful public participation is inevitable. Therefore, it will be fruitful to investigate how transparency and public participation can occur in governance practice in relation to the development of renewable energy in Indonesia. We will discuss and elaborate upon public participation and transparency in more detail in the next section.

2.4 Transparency

2.4.1 Definition

The term “transparency” has multiple meanings, rationales, purposes and applications (Kosack & Fung, 2014). Different definitions of transparency can be seen from the Table 2.2.

Table 2.2: Multiple Definitions of Transparency

Authors	**Definitions**

Florini (2007, p. 5)	The degree to which information is available to outsiders that enables them to have informed voice in decisions and/or assess the decisions made by insiders
Hood (2001, p. 701).	Government according to fixed and published rules, on the basis of information and procedures that are accessible to the public, and (in some usages) within clearly demarcated fields of activity
Birkinshaw (2006b, p. 189)	The conduct of public affairs in the open or otherwise subject to public scrutiny
Grimmelikhuijsen (2012b, p. 55)	The availability of information about an organisation or actor allowing external actors to monitor the internal workings or performance of that organisation
Working Group (1998, p. v)	A process by which information about existing conditions, decisions and actions is made accessible, visible and understandable.
Finel and Lord (1999, p. 316)	Legal, political, and institutional structures that make information about the internal characteristics of a government and society available to actors both inside and outside of the domestic political system.

What the various definitions of transparency have in common is that they refer to a situation where information is provided to the public by the government, thereby enabling the latter to 'look through the windows' of institutions. In so doing, transparency permits the monitoring of government activities by shedding light on what the government does, thereby enabling the public to hold those in authority accountable.

While all the preceding definitions mainly see the role of government or the public sector to be that of an information provider, Drew and Nyerges (2004) argue that transparency involves two-way access to information. This means that transparency not only enables the public to obtain information from the government, but also allows the government to obtain information

about the values of stakeholders. Porumbescu (2017) argues that transparency enables the public to be the part of decision-making process by giving feedback through official websites and by providing them with government information.

Transparency is also seen as a basic human right. Birkinshaw (2006a) claims that access to information is a basic or fundamental human right. Therefore, the right to access information needs to be protected and guaranteed by the government (Nussbaum, 2011). Article 19 of the Universal Declaration of Human Rights (1948) protects the right to receive information and ideas without interference by public authority and regardless of frontiers. The 'Human Development Report 2013' also stresses the need for new forms of governance that provide for greater levels of participation and transparency (UNDP, 2013). Mokrosinska (2018) argues that acknowledging information as a human right is an important step for establishing a positive legal duty on the part of countries to provide citizens with information within their control. From this perspective, it is necessary for the government to be open about information regarding the process, procedures, and outcomes of policies or programs.

2.4.2 Spheres of Transparency

In terms of what should be made transparent in governance process, Grimmelikhuijsen (2012b) distinguishes three spheres areas of transparency in government organisations: the decision making process, policy transparency and the policy outcomes.

Transparency in the decision-making phase concerns the degree of openness about the steps and rationale before the decision is made. In this sense, transparency enables the public to participate in the policy process by reviewing whether the decision is acceptable or in line with norms or election promises. Examples of transparency in the decision- making process include the availability of public forums, meeting minutes or presentations during the consultation process with the public.

The second sphere is policy transparency or transparency about the content of the policy which is the outcome of the decision-making process. The content of policy refers to its rationale and purposes, the elaboration of strategies to achieve its intended goals, how it will be implemented and the potential implications for the public or the affected people.

Lastly, we have the sphere of transparency on policy outcomes. This concerns the provision of information about the effects of the policy after it is implemented. An example would be the provision of a report about the utilization rate of renewable energy after a policy that set a renewable energy target was launched.

The spheres of transparency identified by Grimmelikhuijsen (2012b) can be reclassified into two groups: transparency of process and transparency of outcomes. Transparency in the decision-making process can be categorized as a transparency of process, while transparency of policy and policy outcomes can be classified as a transparency of outcomes.

2.4.3 Elements of Transparency

Greg Michener and Bersch (2013) claim that two main elements constitute transparency, namely visibility and inferability. The first and the most fundamental element of transparency is visibility since without visibility, the word transparent loses its relevance (Greg Michener & Bersch, 2013). The term visibility refers to the extent to which information is accessible and complete. Accessible means that information regarding the public service or decision making process should be easily attainable (Fung, 2013) and is available to anyone, at any time and any place (Park & Blenkinsopp, 2017). Additionally, the information is also required to reflect a high degree of completeness. This means that information should not be presented incomplete or only in part, since this can be misleading or serve to manipulate public perceptions. With regard to completeness, Heald (2006) argues that transparency does not mean that one should provide information to everyone and/or about everything, such as giving out sensitive market information, the disclosure of which can lead to insider trading

and market distrust (Heald, 2006, p. 70). In this regard, only relevant information that can be fully presented with no hidden meanings or facts should be provided.

However, more information does not necessarily mean greater transparency. Greg Michener and Bersch (2013) highlight the other important element of transparency, namely inferability. The term inferability refers to the degree to which information is disaggregated, verified and simplified. In other words, information provided should be true and meaningful, hence can be used to derive accurate inferences. This relates to what Drew and Nyerges (2004, p. 36) term clarity, whether the information is clear, understandable, and meaningful for stakeholders. This suggests that available information should be comprehensible and thus increase the understanding of the users (Hosseini, Shahri, Phalp, & Ali, 2018).

In regards to inferability or the quality of information, Drew, Nyerges, and Leschine (2004) suggest that information provided needs to be integrated with the broader decision context. For example, information regarding policies or actions made in the renewable energy sector should be placed in a larger context e.g.: sustainable development and alignment with development policies in other related sectors such as in transportation, housing, and education sectors. Additionally, integration also refers to long term planning, such as a five-year development plan. This forward-looking information is the key to effective communication to the market as it provides a full picture of the context and guidance for decision making (PricewaterhouseCoopers, 2016).

2.4.4 Significance of Transparency

The demand for greater transparency has been increasing globally. Pollitt and Bouckaert (2004) note that many reforms were carried out in order to make government more transparent. Many global institutions have urged countries to become more transparent. For example, the OECD promotes transparency because it is a key factor in building trust and accountability, both of which are necessary for democratic institutions and market economies

(Gurría, 2020). The World Bank likewise sees transparency as an instrument for dealing with shocks, driving economic growth, and building trust (World Bank, 2019).

The role of transparency in ensuring good governance in the public service has been recognized in the literature. The study of De Fine Licht et al. (2014) found that transparency can enhance the legitimacy of decisions. They argue that a more informed society can create better understanding about the reasoning behind decisions, hence it is more likely that people will accept the process of decision making and its outcomes.

Transparency is also often linked with the level of trust in the government. Jang, Cho, and Drori (2014) argue that the disclosure of information will improve public trust and confidence in government. Hood and Heald (2006) further add that the culture of openness within organizations tends to have a positive effect on trust. Furthermore, increased levels of trust can help to improve public sector efficiency and effectiveness (Yang & Holzer, 2006). In this sense, where trust in government is low, the costs of policy implementation tend to be higher (Porumbescu, 2017). This can be due to an unwillingness to engage with other policy actors, conflicts with such actors and rejection from the citizens.

Some scholars argue that transparency can reduce government corruption. Kolstad and Wiig (2009) state that transparency makes corrupt acts more risky by increasing levels of accountability. The disclosure of information enables the public to monitor public officials thereby compelling them to operate in a responsible manner (Meijer, 't Hart, & Worthy, 2018). Furthermore, Park and Blenkinsopp (2017) argue that a transparent government can strengthen ethical behaviour by encouraging responsible conduct and creating a favourable public image for the institution. However, the effectiveness of transparency in curbing corruption depends on people's ability to process the information and their incentives for taking action on that information (Kolstad & Wiig, 2009). In addition, sanctioning mechanisms

are imperative to enable transparency to be effective in fighting corruption as they will discourage bureaucrats from performing illegal actions (Bertot, Jaeger, & Grimes, 2012).

Transparency is also perceived as being important for solving common problems which require collective action from all stakeholders. Florini (1999) claims that as the world becomes more tightly integrated, many people are affected by, and thus want to have a say in, what used to be other people's business. Hence, the availability of information will make coordination among countries and institutions easier. For example, when dealing with climate change, the availability of information e.g.: on fossil fuel combustions, economic activities and the energy mix of countries, can provide a basis for formulating and implementing integrated measures to deal with climate change problems.

2.4.5 Critics on Transparency

Despite its benefits, transparency is not without controversy and criticisms. Etzioni (2016) argues that transparency is overvalued, that it cannot fulfil the functions that its advocates assign to it and that transparency has the potential to eliminate, if not reduce, government control or legislation. Furthermore, Etzioni argues that transparency can lead to misinterpretation. This is because the public does not have the knowledge to process the information or the capacity to act on it even in the case of rather simple information. Hence, transparency can be inimical to good governance (Bannister & Connolly, 2011).

In addition, the governments deliberately develop forms of behaviour which limit the impact of transparency in order to avoid public scrutiny and to preserve state secrecy (Sharma, 2013). The willingness and ability of an information holder to provide information are essential for transparency to work effectively (Florini, 1999). However, governments sometimes see preparing and disseminating information as being a burden that does not yield benefits for them or provide them with useful feedback. This can deter agencies from making information publicly available.

Furthermore, Grimmelikhuijsen (2012b) claims that transparency can lead to increased blame and distrust of government. An example is the disclosure of state confidential documents by WikiLeaks which were then the subject of a media blow-up. This has negatively impacted levels of trust in government. In this regard, Bannister and Connolly (2011) suggest that there are times and places where transparency is best circumscribed and even avoided. In a similar vein, Heald (2006) argues that transparency does not mean providing information for everyone and/or about everything. An unauthorized disclosure regarding sensitive market information, for example, may create distrust and have a negative impact upon the legitimacy of authority.

While the critics suggest that problems regarding transparency are inherent, many argue that its negative effects can be mitigated. For examples, Heald (2006) suggests that an effective transparency framework needs to be buttressed by a sound constitutional framework for government.

2.5 Public Participation

2.5.1 Definition

There are various definitions of public participation. It has been defined differently according to the context and objectives (Strobl & Bruce, 2000). While in the past public participation was commonly viewed as being the opportunity to convey comments in a public hearing or to vote in the electoral process, nowadays it is regarded as being the process or procedures which give people a voice and influence in government policy making (Webler & Tuler, 2001). Among others, different authors define public participation as:

> *"The redistribution of power that enables the have-not citizens, presently excluded from the political and economic processes, to be deliberately included in the future." (Arnstein, 1969, p. 216)*

"*The process by which public concerns, needs, and values are incorporated into governmental and corporate decision making. The process is based on interaction and two-way communication. The overall goal is to make better decisions by the support from the public." (Creighton, 2005, p. 7)*

"A process through which the stakeholders influence and share control over development initiatives, decisions and resources which affect them." (World Bank, 1996, p. xi)

From these definitions, we can see that what they share in common is the view that public participation is a mechanism that allows for the redistribution of power between the government and the governed. As Plummer and Tritt (2012) observe, public participation enables shared control over priority setting, policy making, resource allocations and access to public goods and services. Furthermore, Petts (2009) associates public participation with the principle of democracy, namely, that being informed, consulted and expressing opinions are the right of citizens. Hence, this study views public participation as a mechanism or procedure by which all relevant stakeholders are engaged in meaningful activities in public policy processes through a two-way communication process that seeks to attain consensus.

2.5.2 Elements of Public Participation

Using the work of Archon Fung (2006), this study divides the elements of public participation into three main dimensions: the participants, the methods and the impact. This elaboration of the dimensions of public participation enables us to analyse the actors, mechanisms and purpose of public participation, elements which must be considered when we seek to improve the participatory process.

The first element is the participant in public participation. Dietz and Stern (2008, p. 15) argue that the word "public" in public participation can refer to everybody and they divide participants into four groups: the stakeholders (the affected or those who have a strong interest in the outcome of a decision), the directly affected public (individuals and non-organized groups who will experience positive or negative effects from the outcome), the observing public (the

media, cultural elites and opinion leaders), and the general public (all individuals who are not directly affected by the issue but who may contribute to public opinion on it).

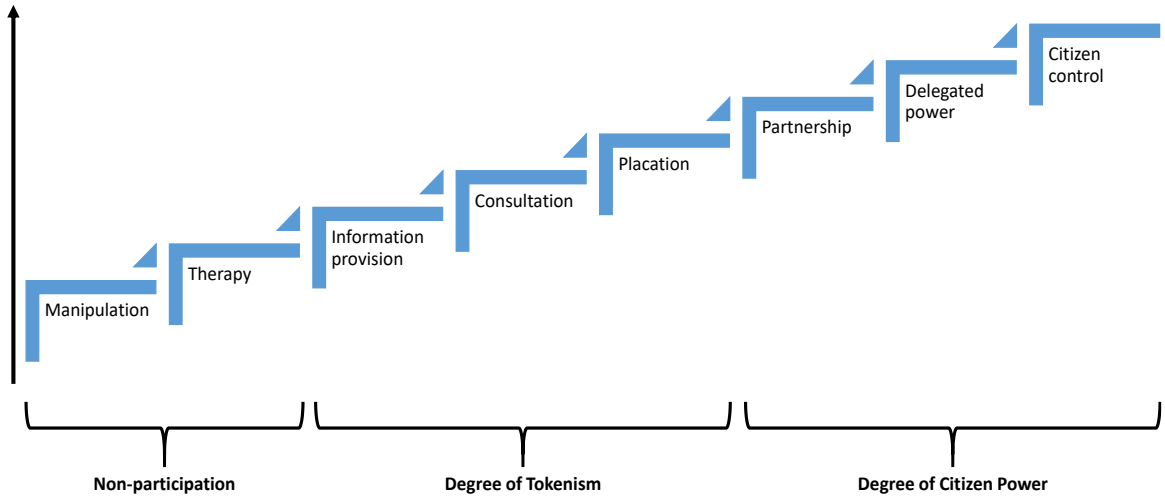
However, despite its positive impact on enhancing democratic capacity and legitimacy, the involvement of “everybody” is costly and time consuming (Uittenbroek, Mees, Hegger, & Driessen, 2019). Rather than focus on complete representation of interests, public participation should be opposed to full inclusion (Innes & Booher, 1999). The adequacy of representation, according to Dietz and Stern (2008), can be determined by considering factors such as: the scale of the problems, the characteristics of individuals and the difficulties the parties may have in organizing collectively for representation. Furthermore, Fung (2006) notes that some forms of public participation are open to all while some are restricted only to designated actors. While some participation processes must be limited for practical reasons, Dietz and Stern (2008) emphasise that transparency about who and how participants are selected is imperative.

Another element of public participation is the methods or how the participants interact and make decisions. There are various formats of participation practices ranging from passive involvement where participants simply receive information to a more active involvement where participants have a certain degree of power to influence process and decisions. This can include participation practices that aim to disseminate information (such as public hearings and listening sessions), to extract knowledge (such as public survey and focus groups), and to obtain feedback (such as workshops and sounding board groups) (Uittenbroek et al., 2019). Dietz and Stern (2008) observe that public participation is usually designed to take account of specific circumstances, to learn from previous practices, to address potential barriers and sometimes to incorporate different participatory modes at different stages, all of which have an impact on the degree of deliberation.

Different forms of public participation have emerged globally in many policy areas. These forms include deliberative polling, citizen participation, citizen's assemblies, online referenda, creation of community-based ownership, focus groups, public hearings, consensus conferences and monitoring from below (Jami & Walsh, 2014; MacArthur, 2016; McIntyre-Mills, 2014). These various modes of participation show the complexities of the current governance system which often depends on its contexts and purposes.

The final element of public participation is the impact that it has on the decisions or outcomes of the process. A seminal work of Arnstein (1969), "A Ladder of Citizen Participation", provides a typology of public participation processes based on the degree of impact that they have on the decision making process.

Figure 2.1: The Ladder of Participation



Source: Arnstein (1969)

As can be seen from Figure 2.1, Arnstein (1969) classifies the level of participation into eight rungs in which the higher the ladder, the greater the impact of participation. Furthermore, the eight ladders are grouped into three levels or degrees of participation. The lowest degree of participation is termed 'Non-participation' which includes the first two rungs: manipulation and

therapy. At this level, the influence on decision making is the weakest. In such instances participation is ineffectual, only used to legitimate decisions without any intent for seeking public input or recommendations (Rowe & Frewer, 2000). At this level, the purpose of engagement is mainly to educate rather than to gain input from the public into the content or implementation of the policy. Moving to the next highest level is the degree of 'Tokenism'. This includes information provision, consultation and placation. At this stage, the public is able to obtain information and to voice their opinion. However, the power of the public to ensure that their voices are taken into account is restricted by the powerholders. The highest level of participation is 'Degree of Citizen Power' which includes partnerships, delegated power and citizen control. At the partnerships level, the public has the opportunity to negotiate with the authorities, while at the top two levels; delegated power and citizen control, the public has substantial power to influence the process and outcomes of the policy.

Based on Arnstein (1969) classification, it can be said that public participation is perceived to be meaningful when it reaches rung six of the ladder, namely, partnership. This is because at this level the public start to have the power to influence governance and policy processes. van Ast and Boot (2003) note that at the highest level of participation, the public have the most control and can take the initiative within governance and policy processes, while the government's role is limited to that of being the facilitator.

2.5.3 Significance of Public Participation

Public participation has become an important element in the public policy arena. In the environmental policy field, public participation is seen as being the key pillar of good quality governance, hence its adoption has been advocated by government leaders at all levels (Beierle, 1999; Johnson, 2020). Furthermore, broader participation is desirable in dealing with a problem that requires collective action, such as renewable energy development.

Many suggest that public participation is the key to obtaining better quality decisions or policies. Public participation provides an opportunity for the public and the authorities to expand their knowledge and expertise through a process of deliberation which may in turn enable them to generate innovative solutions (Mitchell, 2005). Through facilitating wider public participation, the government can access all the relevant information, ideas, concepts and resources and then mobilise them to deal with complex problems (Diduck & Mitchell, 2003). The decisions that result from this process should therefore be informed and well-considered (O'Faircheallaigh, 2010). The public can be an important source of knowledge for decision making by revealing hidden assumptions, discovering mistakes and by providing local knowledge and experience or other critical information (Chompunth, 2011). In addition, public participation enables experts from various disciplines to share their perspectives and in so doing can help them to structure the problems and to explore policy options (Renn, Webler, & Wiedemann, 2013).

Public participation is seen as a means of securing the legitimacy of decisions. Legitimacy can be described as the perception that the actions of an entity are desirable, proper and appropriate (Schlossberg & Shuford, 2005). Legitimacy can be achieved by making the decision making process clear and by involving the public in the decision making process (Creighton, 2005). It can also be achieved by showing respect to others and by authentically seeking to learn from their knowledge and experience (Webler & Tuler, 2001). Further, the possession of legitimacy can enable decision makers to obtain greater support from the public, to more effectively implement their decisions and to develop valuable relationships with other participants (Roberts, 1995).

Public participation has also been found to be an effective approach to reduce conflict. In the context of renewable energy development, conflicts are likely to emerge. The most discussed topic is the NIMBY (Not in My Back Yard) problem, where renewable energy projects face

rejection from local people as projects are perceived as being a threat to health and the environment. Public participation is an effective measure to resolve this problem. Beierle (1999) argues that public participation allows for two-way communication among multiple interests. It can build trust and good relationships between parties, thereby enabling problems to be resolved (Creighton, 2005; Fiorino, 2006). Beierle (1999) adds that when the decision is reached, participants are bound by it, at least informally. Public participation therefore has the ability to foster collective action and support from stakeholders.

Another benefit of public participation is enhancing public knowledge. Creighton (2005) maintains that by participating in decision-making, participants can obtain knowledge not only about the substantive problem addressed by the policy plan but also about the decision–making process itself. Frans Coenen (2009) adds that through participation, people can learn how to interact with other participants who have different perspectives and interests. Public participation is particularly valuable when the policy issue or problem is a novel one with which the public is unfamiliar, such as the utilization of renewable energy. El Fadel, Rachid, El-Samra, Boutros, and Hashisho (2013) note that lack of knowledge and awareness is one of the main barriers that proponents of renewable energy face in many developing countries. Public participation can help address such problems. McIntyre-Mills (2014) argues that public participation can raise people's awareness of how to live in sustainable way and change their attitudes so that they become more environmentally-friendly. In a similar vein, Bulkeley and Mol (2003) argue that learning is an important component of public participation as it is a source of information about the issues that can inform public action.

As discussed above, public participation has many potential benefits since it can generate better quality decisions as well as support the development of renewable energy. Public participation is beneficial for both the government and the public. Hence, it is important to

encourage better public participation at all levels and stages of decision making processes (Petkova et al., 2002).

2.5.4 Critics of Public Participation

Despite the extensive benefits of public participation, scholars have identified some shortcomings. Many argue that public participation is costly and time consuming. Irvin and Stansbury (2004) maintain that using a single administrator will be less costly than involving many stakeholders and that it could result in a similar decision. Furthermore, it is likely that the more participants that are involved in decision making, the more time will be required to explore and synthesise the multiple perspectives. Further, it is possible that negotiations will stall, that trust will diminish and that any decision made will be rejected by some parties, all of which can delay the process of making and implementing decisions (O'leary, 1999). Furthermore, the design of public participation can make the process of decision making excessively protracted. The study by Echeverria (2000) found that the participatory process can be deliberately designed to slow down the decision making process to maintain the status quo. On the other hand, Irvin and Stansbury (2004) argue that the high cost of public participation can be outweighed by the value gained from the process, such as enhancing social capital, creating better solutions and breaking political gridlock.

Another concern about public participation practice is that it can be orchestrated. The study of Gascon and McIntyre-Mills (2018) found that public participation could become an empty notion as the voice of powerful elites often drowns out that of other stakeholders. Steg et al. (2015) describe this as “fake” engagement since involvement is meaningless and voices are not really being considered within the decision making process. In this sense, Snider (2010) argues that transparency is required to deter fake public participation by disclosing detailed information about the participation process including the budget, organizer, timeline of meetings and the minutes of meetings.

The discussion above shows the importance of transparency and public participation for securing better governance practice. Transparency and public participation have also been identified as key elements that can enhance the policy process and enable it to deal with problems that require collective action, such as renewable energy development.

2.6 Conclusion

This chapter has examined a range of key concepts in order to construct an analytical framework for the study. These key concepts included those of sustainable development, governance, transparency and public participation.

Examining sustainable development enables us to understand how renewable energy can help achieve a sustainable future. The process of developing renewable energy however, is currently very slow. It has been suggested by scholars such as Gunningham (2012, 2013) and Marquardt (2014) that governance is one of the major obstacles that impedes the development of renewable energy. This chapter argues that renewable energy should be framed as a common good. Hence, the way in which it is currently managed needs to be modified.

Transparency and public participation are perceived to be significant means of enhancing the development of renewable energy. While transparency can strengthen accountability and public trust, public participation can enhance legitimacy and the quality of decisions. Both transparency and public participation are also seen to be effective in encouraging collective action among relevant stakeholders, which is imperative for dealing with a complex problem such as renewable energy.

The key concepts discussed in this chapter will be further elaborated in the following chapter. International experiences of renewable energy governance will be presented to identify the key determinants of successful energy transition. Furthermore, an analytical framework of this study is also discussed in the next chapter.

CHAPTER 3
INTERNATIONAL EXPERIENCE OF RENEWABLE ENERGY GOVERNANCE AND ANALYTICAL FRAMEWORK

3.1 Introduction

The previous chapter reviewed the relevant literature with a specific focus on the issues of sustainable development, governance, transparency and public participation and their relevance to renewable energy development. This investigation leads to the question of what form of governance can most effectively facilitate the transition to renewable energy development. To answer this question, it will be useful to review the experiences of other countries with regard to renewable energy governance.

This chapter aims to further extend the discussion found in the previous chapter and is divided into two main sections. The first section describes the experiences of renewable energy governance in other countries. The second section presents an analytical framework which was developed in order to investigate renewable energy governance in Yogyakarta. The investigation or analysis of the governance process is focused on transparency and public participation.

3.2 International Experience of Renewable Energy Governance

This section provides a snapshot of renewable energy governance in three countries, namely Thailand, Australia and Germany. Thailand is selected because it is considered to be an appropriate benchmark for Indonesia due to its geographic proximity and similar level of socio-economic development. Success stories in South Australia and Germany are also discussed here in order to provide valuable insights on how energy systems can be transformed towards greater reliance on renewable sources.

3.2.1 Thailand

Thailand is one of the countries in South East Asia that has made the most progress in terms of a shift toward renewable energy. Together with Vietnam, Thailand's renewable energy capacity grew more than 50 percent from 2014 to 2019 whereas Indonesia's figure only improved 17 percent during the same period (Nugraha & Yusgiantoro, 2021). Furthermore, Thailand has the highest capacity of installed solar PV (Photovoltaics) among South East Asian countries. In 2018 Thailand's solar PV capacity reached 2,753 MW, followed by the Philippines (903 MW) and Malaysia (354 MW), while Indonesia only reached 90 MW (Maulidia, 2019). Currently, renewable energy contributes a third of Thailand's overall power mix (Modi & Lackovic, 2021).

Arguably, Thailand's energy transition has been crucially shaped by the role and the commitment of the Electricity Generating Authority of Thailand (EGAT). EGAT is the largest state owned enterprise and the key actor in electricity generation and transmission in the power sector (Sirasoontorn & Koomsup, 2017). Endorsed by the Cabinet and the National Energy Policy Council (NEPC), in 2007, EGAT started to make agreements with small power producers and purchase renewable energy from them at a reasonable price in a set period of time (Phoumin, Kimura, Wongsapai, & Achawangku, 2019). The agreements and the certainty of purchase has helped to boost investment in renewable energy sectors. Guild (2020) argues that the success of Thailand's reforms was driven by the commitment from EGAT in making business agreements with private energy producers, notwithstanding the fact that such agreements went against EGAT's own interests and were likely to reduce its market share. Furthermore, to enhance reform in the energy sector, Thailand also established the Energy Regulatory Commission (ERC) in 2007. The objective was to separate the functions of policymakers, regulators and operators in the governance of energy. As an independent regulatory body for the energy sectors, the ERC has

responsibilities, amongst others, to regulate tariff setting, to issue licences for the energy industry, to regulate power procurement, to protect consumer rights and to protect energy industry operations (EGAT, 2020).

Thailand's development of renewable energy is supported by incentives and price subsidies. Feed in Tariffs (FiT) for example, were rolled out in 2007, together with the purchase agreement program which was coordinated by EGAT. FiTs were applied to almost all types of renewable energy sources, including biomass, biogas, municipal waste, hydropower, solar and wind. Chaiyapa, Esteban, and Kameyama (2018) noted that solar PV was prioritized by the government as it has the highest FiT rate and a longer subsidy period. Hence, solar energy in Thailand has advanced rapidly to become the largest in South East Asia and the fifth largest in Asia (Besta, 2019). Furthermore, in terms of biofuel energy, a comprehensive set of policies such as targeting the supply and demand side, fixing the floor price for buying raw materials from farmers, subsidies and tax waivers for importing production technology have successfully increased the uptake of biofuel (Chanthawong & Dhakal, 2016). Others incentives, such as low-interest loan schemes, grants, tax exemptions and reductions, were also introduced to encourage energy industries to develop renewable energy (Beerepoot, Laosiripojana, Sujjakulnukij, Tippichai, & Kamsamrong, 2013).

Effective coordination with local government has accelerated energy transition and the implementation of renewable energy policy at provincial levels. Kunchornrat and Phdungsilp (2012) note that many local governments in Thailand took initiatives to address energy and climate change issues by developing energy and energy efficiency strategies and taking actions to enhance transportation management and climate change mitigation and adaptation strategies. However, local governments cannot act alone and depend on support from the central government. For its part, the central government created an enabling environment for local governments to advance renewable energy development. This was

done by issuing regulations and guidelines to develop energy strategies, promoting energy efficiency and the use of renewable energy, establishing energy codes for commercial buildings and energy auditing for buildings and factories, among others (Kunchornrat & Phdungsilp, 2012).

A clear and predictable regulatory framework has also been identified as the key factor that contributed to the development of renewable energy in Thailand (Schonfeld, 2010). The formulation of energy policy is buttressed with public engagement and transparency. Chaiyapa, Hartley, and del Barrio Alvarez (2021) note that the regional energy development plan was formulated through a series of focus group discussions (FGDs) at sub-national levels to obtain inputs from stakeholders at regional levels, including local government, village leaders, villagers, university scholars, energy companies and NGOS. By bringing the results of these FGDs to a conference attended by energy officers from central and provincial governments, the level of transparency in the policy making process was enhanced. Public engagement enhanced transparency and allowed for the integration of multiple perspectives into the policy-making process, thereby enabling the creation of a more locally responsive policy. In this regard, public participation is not regarded as tokenistic, rather it is an important and substantive stage of the policy process. In addition, Chaisomphob, Sa-nguanmanasak, and Swangjang (2004) found that appropriate public participation has become an important factor in determining the success of the establishment of energy projects as it helped to build mutual understanding between the public and the project developer or government.

3.2.2 Australia

This section describes South Australia's renewable energy governance. The transition toward sustainable energy in South Australia can be regarded as a success. The state has gone from 100 percent reliance on fossil fuel in 2002 to the point where renewable energy supplied 52 percent of its electricity in 2018 (McGreevy, MacDougall, Fisher, Henley, & Baum, 2021).

The utilisation of coal as an energy source stopped in 2016 (Department of the Environment and Energy, 2019). Further, the state aims to achieve 100 percent reliance on renewables by 2030 by utilizing energy sourced from solar and wind (Parkinson, 2019).

In contrast to countries in South East Asia where central government is the main actor in the development of renewable energy, the transition toward renewable energy in Australia is primarily driven by the state governments. Warren, Christoff, and Green (2016) describe how state governments in Australia have taken over the responsibility to develop sustainable energy options in the absence of strong and consistent federal policies. The federal government, while being the highest regulator for energy market, has had weak, inconsistent and often conflicting energy and climate policies (Cheung & Davies, 2017).

Compared with other states in Australia, the South Australian government has been at the forefront of initiatives to push the development of renewable energy. Their motivations for doing so were twofold. First was the willingness of the state government to show leadership in addressing the major risks of climate change to South Australia. This was specifically affirmed by the former state premier Jay Weatherill in a seminar hosted by the Australian Wind Alliance and the Energy Transition Hub at Melbourne University in 2018. He stated that climate change posed particular risks for South Australia and that it will affect the capacity for South Australia to be liveable (Weatherill, 2018). Second, renewable energy is seen as the best option for increasing energy security. In 2002, South Australia experienced power deficits, hence it imported 30 percent of its energy needs from interstate and paid the highest prices for electricity in Australia (McGreevy et al., 2021).

The success attained by South Australia has not been without its challenges. The fact that renewable energy development will disrupt the energy market and adversely affect energy stakeholder's interests has created great obstacles that must be dealt with. The critics even came from the federal government. In 2017, Scott Morrison, who was the federal treasurer

at that time, attacked the South Australian government's renewable energy policy in Parliament House by stating:

> *"The South Australian Labor government is switching off jobs and switching off lights and switching off air conditioners and forcing Australian families to boil in the dark as a result of their dark ages policies,"* (Slezak & Murphy, 2017)

Despite these criticisms, political leaders in South Australia have firmly embraced renewable energy as part of their state's future. Alongside this strong political commitment, good cooperation with private energy businesses was a major factor that facilitated energy transition in South Australia. The state government worked closely with the energy market to prevent major disruptions, to accommodate displaced workers and to otherwise manage the transition effectively (McGreevy & Baum, 2021).

Energy in South Australia has been supplied under a privatised market-based system since 1999. The privatisation of the Electricity Trust of South Australia (ETSA) was promoted as a debt reduction measure and contributed $2 billion dollars to state revenue (Beder & Cahill, 2005). Being privatised, the transition to renewable energy should offer commercial incentives to encourage the shift from conventional energy sources. Hence, incentives were rolled by the government, such as feed in tariffs, subsidies, funding, bulk purchasing agreement, and providing information about and access to the resources and power grid (Government of South Australia, 2015). Under such a privatized energy system, (Bassano, 2021) notes that in 2020, renewable energy supplied 53 percent of South Australia's electricity demand and that most of such energy was sourced from solar and wind power. The state has been transformed from a net energy importer to an energy exporter (Department of the Environment and Energy, 2019).

McGreevy et al. (2021) observe that good public policy has been the factor that has underpinned the dramatic change of energy regime in South Australia. Arguably, public policy

in South Australia is characterised by good levels of transparency and public participation. This is indicated by the issuance of a Discussion Paper by the government as a mechanism for securing consultation with stakeholders. In this instance it was the Discussion Paper on Renewable Energy Policy issued by the Government of South Australia. This paper contains the updates of existing energy policies including new forms of energy generation, storage, and distribution, and provide improved guidance regarding the intensity, location and impacts of these developments (Government of South Australia, 2019).

Despite the huge success in developing renewable energy, the privatised system has been blamed for high electricity prices. Surveys from the Australia Institute indicate that privatisation is the main factor that accounts for price increases in the energy sector (The Australia Institute, 2019). Among other states in Australia, electricity cost per kWh in South Australia is the highest (O'Neill, 2021).

3.2.3 Germany

This section highlights one of the energy policies of Germany that has been discussed at length in the energy and sustainability literature, namely, the *Energiewende* or energy transformation. *Energiewende* was launched in 2011 as a response to the Fukushima nuclear meltdown. The policy aimed to phase out nuclear energy, to reduce fossil fuel consumption and to increase energy efficiency (Renn & Marshall, 2016). To achieve these goals, renewable energy was identified as the best solution, hence the share of renewables in electricity was targeted to increase from 12% in 2011 to 35% in 2020 and 80% in 2050 (Jacobs, 2012). *Energiewende* is a mammoth policy project, juxtaposing multiple different quantitative energy related targets and it is the most aggressive clean energy policy among the G20 countries (Sopher, 2015). In other words, *Energiewende* completely transformed the German energy policy landscape.

In 2020, the share of renewable energy in German power production reached 44.6 percent of total energy sources (Appunn, Haas, & Wettengel, 2020). This was achieved by the installation of wind farms, solar arrays and hydro and biogas plants throughout the country. While the utilization of renewables increased, coal power dived to a new low in 2021 which reduced the levels of carbon emissions (Joshi, 2020).

In its early years, *Energiewende* faced great challenges particularly from fossil fuel and nuclear actors. The federal or central government was seen to be reluctant to act and it failed to reduce the level of carbon emissions since it continued to rely on coal consumption (Hall, Lobina, & Terhorst, 2013). Equally, there was disappointment with the performance of private energy companies which failed to address the demands for renewable energy and were slowing down the transition process (Becker, 2017). Widespread scepticism about the role that the central government and private sector could play in ensuring the transition to renewable energy triggered the re-municipalisation movement, a process which involved the reversal of the privatization of the energy service to local authorities or state government and which enabled local ownership. The re-municipalisation of the German energy sector was mainly aimed at attaining greater control and efficiency over energy affairs. Hall et al. (2013) argue that the desire to obtain more direct control over the type energy used, to establish affordable prices and to gain revenue from distribution charges were the main factors driving re-municipalisation.

The sub-national governments or the states determine the pace of renewable energy development through their specific targets and regulations (Monstadt & Scheiner, 2014). The re-municipalisation movement has highlighted the role of sub-national or state governments in Germany's energy transition. The discretionary powers possessed by the municipal or state governments in the energy sector are analysed in the work of Ohlhorst (2015). For example, the state governments can supplement the regulatory framework established by

the central government, thereby allowing them to set their own legal and administrative framework. The state governments also can influence energy policy and federal law through their representation in the Federal Assembly and in the Federal-State Energy Summit. Further, the state governments have a high degree of responsibility to achieve the climate change protection goals set by the central government and to increase the use of renewable energy. The authority possessed by the state governments to develop renewable energy is buttressed by the support they receive from the public. Wagner and Berlo (2017) claim that many cities and villages in Germany are very determined to achieve 100 percent renewable energy, zero carbon emissions or zero-impact communities.

The success of *Energiewende* was due to the strong commitment and collaboration of all relevant stakeholders. Jacobs (2012) notes that the implementation of *Energiewende* has involved a wide variety of actors, such as the public sector, private and public energy companies, small and medium enterprises, private households, farmers and local utilities, which required different types of support in order to participate in the energy sector in a meaningful way. In terms of renewable energy project development, Langer, Decker, and Menrad (2017) emphasize that the involvement of local citizens in planning processes has played a significant role in determining public acceptance of such projects. Provision of information and the opportunity to share their concerns were found to be vital in enhancing public acceptance of renewable energy projects (Langer et al., 2017).

New formats of decision-making were also utilized in Germany. One example is the establishment of the Ethics Commission in 2011, a group which consists of researchers, industry representatives and representatives from civil society. The Ethics Commission was formed after the nuclear disaster in Fukushima. It made recommendations to phase out Germany's nuclear energy by 2021. In addition, a number of working groups and discussion platforms involving diverse stakeholders in the renewable energy sector have been formed.

The central government also organized civil dialogues with the public to discuss the challenges and opportunities of the current energy transformation including the integration of the conventional energy system and market with renewables (Jacobs, 2012). The involvement of diverse stakeholders has enabled policy-makers to manage the complexity of decision making during the energy transformation process.

3.2.4 Lesson Learned from Thailand, Australia, and Germany

Given their success in transitioning the energy system from reliance on non-renewable sources to renewables, the governance of renewable energy in Thailand, Australia and Germany can be considered as providing benchmarks for other countries.

The discussion shows that each country has adopted a unique strategy to place renewable energy on the policy agenda. Thailand, as a developing country, has relied on a centralized or top-down approach in its renewable energy governance while more developed countries, where the level of awareness and knowledge about renewable energy is more advanced, are more locally independent. Indeed, the energy governance approaches taken by these countries are largely influenced by the institutional arrangements of each country. Thailand is a constitutional monarchy with a unitary form of government in which most powers are concentrated at the central government level, while Australia and Germany are federal states based on a strict separation of policy responsibilities for each level of government, hence their sub-national governments have more power compared to that found in Thailand's system.

Furthermore, while state-level governments in Australia and Germany have played a significant role in ensuring the successful transition to renewable energy, both countries adopted different approaches to governing their energy affairs. In Australia energy is privatized, meaning that it is managed and operated by private energy companies. On the

other hand, energy utilities in Germany are managed by the state government and strongly supported by local communities.

Some decisive factors determining the success of the energy transition can be identified. Strong political commitment from key actors has played a vital role in Thailand, Australia and Germany. This strong commitment underpinned the process of policy agenda setting and led to a change in the energy policy landscape across all three jurisdictions. For example, various incentives and facilities for developing renewable energy were introduced through which governments have encouraged the involvement of wider stakeholders, such as the private sector and civil society organizations. In addition, the redistribution of power from the central government to subnational governments has been an important factor that has facilitated the transition toward renewable energy. Experience from the three countries indicates that discretionary power exercised at local levels has enabled subnational governments to take the initiative and to formulate strategies that are more locally responsive when they address energy and climate change issues.

In terms of governance processes, the involvement of diverse stakeholders in decision making is seen to play an important role in improving policy outputs and outcomes. Transparency and public participation played significant roles in enhancing the involvement of diverse stakeholders in the energy transition process. As a result, the development of renewable energy secured greater public acceptance and support from the stakeholders. In addition, participatory processes should be buttressed by the provision of clear and comprehensive information to inform stakeholders and obtain feedback from them. Hence, it is relevant to investigate the role that transparency and public participation could play in developing renewable energy governance in Indonesia.

3.3 The Analytical Framework

This section advances an analytical framework for the study. As mentioned in Chapter 1, this thesis aims to investigate governance practices in Yogyakarta's renewable energy sector with a specific focus on transparency and public participation. Earlier in Chapter 2, a range of key concepts related to renewable energy and governance practice were discussed. This discussion yielded valuable insights that will facilitate an investigation of renewable energy development in Yogyakarta. Furthermore, the overview of renewable energy governance in selected countries provided in the previous section identified key success factors that underpin renewable energy development. By focusing on these factors we can understand how governance practice can better facilitate such development. Based on the discussion of key concepts and the experiences of other countries, an evaluation framework comprising the elements of transparency and public participation is developed in order to investigate what works and does not work in renewable energy governance in Yogyakarta and to discover what can be done to improve it.

This section consists of three parts. The first part discusses the evaluation concepts. The second section presents a review of evaluation frameworks for transparency and public participation. Finally, an analytical framework for this study for the purpose of evaluating transparency and public participation is established.

3.3.1 Defining Evaluation

Evaluation is imperative as the basis for future improvement. Bellamy, Walker, McDonald, and Syme (2001) argue that evaluation is required to identify change, support an adaptive approach, meet the challenge and facilitate capacity building at individual, community, institutional and policy levels. This thesis aims to evaluate governance practices in the renewable energy sector in Indonesia. By conducting a case study in Yogyakarta, this study attempts to identify the challenges that are faced by governance processes in the field of

renewable energy. The investigation will focus on two key governance indicators, namely transparency and public participation.

There are various definitions of evaluation. Scholars have defined it differently based on the methods and purposes of the evaluation. Michael Scriven refers to evaluation as a:

> *"The process of determining the merit, worth, or value of something, or the product of that process. The evaluation process normally involves some identification of relevant standards of merit, worth, or value; some investigation of the performance of the evaluands on these standards; and some integration or synthesis of the results to achieve an overall evaluation or set of associated evaluations."* (Scriven, 1991, p. 139)

Additionally, Fournier views evaluation as:

> *"An applied inquiry process for collecting and synthesising evidence that culminate in conclusions about the state of affairs, value, merit, worth, significance, or quality of a programme, product, person, policy, proposal, or plan."* (Fournier, 2005, p. 139)

While Patton added the purpose of evaluation and defines evaluation as:

> *"The systematic collection of information about the activities, characteristics, and outcomes of programs to make judgments about the program, improve program effectiveness, and/or inform decisions about future programming."* (M. Q. Patton, 2008, p. 39)

Based on the above definitions, this study regards evaluation as a *process of determining the merit or effectiveness of activities and its outcomes based on a set of evidence and analysis against a set of evaluation indicators."*

3.3.2 Evaluation Frameworks

A number of scholars have conducted an evaluation of transparency as well as of public participation. However, there is no fixed framework or criteria for evaluation. A number of evaluation methods, frameworks and indicators have been theoretically outlined with respect to their objectives, focus, scope and disciplinary perspective (Oels, 2009).

In regard to transparency, scholars have utilized various criteria to evaluate transparency. For example, Drew and Nyerges (2004) utilized four objectives of transparency in the context of the environmental decision making process. These criteria are clarity (whether the information is understandable), integration (decisions are integrated into or in line with the

broader context), accessibility (the ability to retrieve information), logic/rational (following the right procedures and providing the rationale behind decisions). These indicators are then utilized as a standard to measure the extent to which transparency occurred in practice. Furthermore, the result of evaluation is used as the basis for enhancing future governance processes.

Another approach to evaluating transparency can be found in Grimmelikhuijsen (2012b). A multidimensional framework was established to gain a thorough understanding of transparency in practice.

Table 3.1: Transparency Evaluation Framework

		Dimensions of Transparency		
		Completeness	**Colour**	**Usability**
Object Of Transparency	**Decision-making**	Complete information about decision making process are available	Information reflects all values and opinions in the process	Decision making process made insightful in timely and understandable manner
	Policy Information	Policy plans and measures are available	Reflecting negative and positive issues about the policy	Policy plans and measures made insightful in timely and understandable manner
	Policy Outcome	information about policy outcome are available	Effects are determined objectively	Policy outcome made insightful in timely and understandable manner

Source: Grimmelikhuijsen (2012b, p. 66)

As can be seen from Table 3.1, Grimmelikhuijsen (2012b) uses three indicators to evaluate transparency in three objects of transparency. The indicators used are completeness, colour and usability. Completeness refers to whether the information is fully made available. Colour is regarded as shedding light on all aspects of information. Finally, usability refers to whether the information is meaningful and understandable.

In regards to public participation, in general, the evaluation of public participation in the literature can be divided into two perspectives: process-based and outcome based. Chess

and Purcell (1999) argue that approaches to evaluate public participation are mainly developed to assess whether participation achieved either process or outcomes.

The first perspective is process-based evaluation. From this perspective, the measurement of public participation focuses on what goes on while a program is in progress and relates to the phase of the program being studied (Abelson & Gauvin, 2006, p. 12). To operationalize the evaluation, different scholars have developed a range of criteria with different foci of evaluation. For example, Fiorino (1990) looks at evaluation on the basis of public participation as a democratic process. Based on the concept of participatory democracy, four evaluation criteria were established, including the mechanism for direct involvement of citizens, share of authority, discussion and deliberation and the equality of role within public participation processes. He further argues that it is imperative for participation process to reflect the ideals of democratic society.

Another example of process-based evaluation can be found in the work of Renn et al. (2013). The assessment of the public participation process found here focuses on two main criteria, namely fairness and competency of the processes. Fairness concerns the opportunity for the public to engage in and design the mechanism of the participation process and to voice their perspectives. Webler (1995) argues that fairness is the key for establishing a forum where equality and popular sovereignty can emerge and personal competence can be advanced. Hence, he added, can facilitate access to knowledge and interpretations and the utilization of the best procedures for resolving disputes about knowledge and interpretation.

In addition, by reviewing 30 case studies of public participation, Rowe and Frewer (2004) found that more than 20 criteria were used to measure the process of public participation. Among others, the criteria were representativeness, inclusivity, early involvement, fairness, competence, deliberation and transparency. Abelson et al. (2003) identified four indicators to evaluate the public participation process. These indicators were representativeness,

information being used, procedural rules that endorse power-sharing and mutual respect and consensus or acceptance over decisions or the outcome produced from the process.

The second perspective is outcomes-based evaluation. Abelson and Gauvin (2006) maintain that the focus of outcome base evaluation is to assess whether public participation has achieved the intended program effects and therefore the end result of the program. Rowe and Frewer (2004) argue that this approach is preferable as the evaluation will correspond more directly to the desired goals of public participation. Other scholars also note that evaluating the outcomes of participation will provide evidence that the initiative works and more importantly provide a basis for improvement (Beierle, 1999).

An example of outcome-based evaluation can be found in the work of Beierle (1999). In his evaluation framework, six social goals were developed to evaluate the outcomes of participatory processes in the arena of environmental policy. These goals are educating and informing the public, incorporating public values into decision-making, improving the substantive quality of decisions, increasing trust in institutions, reducing conflict and cost-effectiveness. He further argues these goals take a broader view of outcomes than is typical. While outcomes usually refer to substantive decisions, conclusions or recommendations, social goals transcend the immediate interests of the parties involved in a decision. In a similar vein, Abelson and Gauvin (2006) identified four indicators that are commonly used by scholars to evaluate public participation from an outcome based perspective. The evaluation indicators are levels of interest in and knowledge of public issues, capacity for future public involvement, propensity for social bond formation and public trust.

Scholars have also conducted evaluation by using two perspectives: process and outcome. Chess and Purcell (1999), for example, investigated public participation from 22 case studies, where 16 cases were evaluated using both process and outcome perspectives, five cases used only a process-based perspective and one case used only an outcome-based

perspective. The study found that using both process and outcome perspectives when evaluating public participation can produce a more comprehensive result than using only one perspective. Hence, the use of both perspectives will enable the study to get a more complete picture of transparency and public participation. Similarly, the works of Germain, Floyd, and Stehman (2001) and Ran (2012) have demonstrated that using both perspectives provides a more structured and comprehensive way to evaluate public participation.

3.3.3 Evaluation Framework for this study

The evaluation framework is a vital component of this study, to allow for the investigation of transparency and public participation in renewable energy governance. It is important to establish a rigorous evaluation framework which will make the findings more credible and may lead to a generalizable conclusion about governance practice (Abelson & Gauvin, 2006). To make generalizable claims, Thurston et al. (2005) argue that some consistency in theoretical frameworks is required.

As discussed above, there are a number of approaches for evaluating transparency and public participation. Drawing on Abelson and Gauvin (2006) and Chess and Purcell (1999), this study will evaluate public participation from two perspectives: process and outcome. This study acknowledges that an evaluation framework needs to include both process and outcome dimensions as they provide for a more comprehensive analysis when evaluating transparency and public participation. Furthermore, the use of such a framework provides for a more structured analysis and generates a more comprehensive evaluation when presenting the analysis. In addition, Ashford and Rest (2001) argue that theoretically and empirically, public participation has both procedural and outcome goals, hence it should be assessed in terms of both perspectives.

To operationalize the framework, a set of evaluation indicators or criteria are identified. As there is no fixed arrangement for evaluation criteria, this study identifies a set of common

themes across the transparency and public participation evaluation literature with a view to determining relevant evaluation indicators. Furthermore, in selecting such criteria we need to consider the context of the study. As Beierle (1999) argues, the best method largely depends on the specific situation and context of the cases. This can be done by understanding the political context, the institutional or administrative structures and the local cultures (Adomokai & Sheate, 2004). The framework and indicators are elaborated in the subsequent sections.

3.3.3.1 Evaluation of Transparency

Deriving mainly from scholars such as Drew et al. (2004), Greg Michener and Bersch (2013) and Grimmelikhuijsen (2012a), this study proposes four indicators to evaluate transparency. These indicators are visibility, usefulness, communication and trust. Arguably, these indicators are the key elements of a transparent governance process and have been used by previous studies to explore how transparency can be attained in practice.

Visibility is perceived as the most fundamental element of transparency. Hence, it is important to include visibility as an indicator. As Greg Michener and Bersch (2013) observe, transparency would lose its relevance without information visibility. Visibility embodies two necessary conditions, namely the accessibility and completeness of available information. Accessibility refers to a condition where information is easily obtained regardless of whether it is voluntarily provided or provided by request. Furthermore, completeness means that all relevant information is fully disclosed (Grimmelikhuijsen, Porumbescu, Hong, & Im, 2013). (Rawlins, 2008) argues that completeness is concerned with the needs of the information receiver rather than the provider. This criterion is necessary to avoid the mere illusion of truth which can distort knowledge and be misleading (Cotterrell, 1999).

The next indicator used is usefulness. While most of the literature of transparency is focused on the accessibility of information, little attention has been paid to how the information is meaningful for the receivers (Hosseini et al., 2018). To be meaningful, Grimmelikhuijsen

(2012a) argues that information should be presented in a timely manner and in an understandable format. Useful means that the content of the information is helpful, beneficial or serviceable to its users (Dawes, 2010). For the purpose of this study, the usefulness of information will be gauged by incorporating perspectives from both the public and private sectors. The investigation will examine whether the information provided enhances public knowledge about the policy or programs and encourages the private sector to get involved in developing renewable energy.

The third indicator used to evaluate transparency is communication. Fombrun and Rindova (2000) note that communication is the primary mechanism to achieve transparency. Communication is typically associated with information flows, which enable stakeholders to exchange thoughts and to understand ideas (Christensen, 2002; Gupta & Mason, 2014). Hence, it is relevant to utilize communication to evaluate the level of transparency in the decision-making process. Communication between stakeholders, as argued by Gelders and Brans (2006), should begin from an early stage of the policy process as it enables policy makers to discover the extent to which people are for or against an idea or changes. Further, Drew and Nyerges (2004) argue that communication should promote two-way relationships. What this means is that not only can the public obtain information from the government, the government can also have access to public concerns and values.

Lastly, this study utilizes “trust” as an indicator to evaluate transparency from an outcomes based perspective. Transparency has been widely acknowledged to be a key factor in building trust (Hood & Heald, 2006; Jang et al., 2014). Grimmelikhuijsen (2012b) argue that while trust in government might not be a necessary condition for maintaining power, it is necessary for actions to be effective. From the perspective of the present study, trust is an important element when addressing problems which require collective action from all stakeholders. Without trust, it is difficult to secure cooperation from the stakeholders without

using coercion. Hence, it is relevant to use trust as one of the indicators to examine transparency.

3.3.3.2 Evaluation of Public Participation

Four indicators are used to evaluate public participation. Two indicators, namely *inclusivity* and *quality of deliberation* are utilised to evaluate the process of public participation and the other two indicators, namely *influence on decision* and *public education*, are used to evaluate from the outcome perspective. These indicators were chosen for two reasons. First, these indicators have been frequently identified in the literature as being key determinants of the success of public participation. Secondly, these indicators are perceived as being problematic within the context of renewable energy governance in Indonesia. Hence, the utilization of these indicators will help to reveal and to evaluate renewable energy governance in Indonesia, specifically public participation in decision-making processes.

The first indicator used to examine public participation is inclusivity. A number of researchers have included inclusivity as an evaluation indicator since it is seen to be the essence of public participation (Abelson & Gauvin, 2006; Rowe & Frewer, 2004). Inclusivity is also regarded as being necessary to ensure adequate representation of stakeholders, including the affected ones (Petts, 2009) and to ensure that the most informed and well considered decisions are generated (O'Faircheallaigh, 2010). Furthermore, inclusivity or adequate representation is particularly relevant for this study. This is because renewable energy problems are complex and require collective action from all stakeholders to solve them. In this study, inclusivity will be explored by investigating the extent to which diverse stakeholders are involved in decision making processes, particularly the private sector and local citizens.

Next, the public participation process will be examined by using a “quality of deliberation” indicator. Adopted from the work of Beierle (2010), this indicator is an important determinant of whether public participation processes permit collaboration among stakeholders, thereby

allowing them to improve the quality of decisions. Criteria such as the ability to question claims and assumptions and to actively participate in problem formulation and decision making can be used to explore the quality of deliberation in public participation processes (Beierle, 2010; Dietz & Stern, 2008).

The third indicator is influence on decisions. Public participation has been essentially seen as a mechanism for redistributing power (Plummer & Tritt, 2012; Webler & Tuler, 2001). Hence public participation should empower the participants by providing them with genuine opportunities to influence a decision (Bond, Palerm, & Haigh, 2004). This indicator has been commonly used to analyse the quality of public participation. The utilization of the indicator can be found in the work of Rowe and Frewer (2004), Bond et al. (2004), Dietz and Stern (2008) and Chompunth (2011). The purpose of this indicator is to ascertain whether decisions have taken into account the concerns and interests of participants.

Furthermore, this study utilizes public education as an evaluation indicator. As discussed in section 2.5.3, public participation is regarded as being the key mechanism for enhancing public knowledge. This is particularly relevant for this study, as lack of knowledge and awareness has been one of the barriers to renewable energy development in Indonesia (Marquardt, 2014).

A summary of evaluation indicators is provided in Table 3.2.

Table 3.2: Evaluation Indicators

Evaluation Indicators	Explanation
TRANSPARENCY	
Process-based Evaluation	
Visibility	To what extent information is accessible and disclosed fully for the public (Drew & Nyerges, 2004; Greg Michener & Bersch, 2013).
Usefulness	To what extent information is beneficial and meaningful to help the users understand the issue or enhance their knowledge (Dawes, 2010; Grimmelikhuijsen, 2012a, 2012b; Hosseini et al., 2018).
Communication	The extent to which information is exchanged among stakeholders (Christensen, 2002; Drew & Nyerges, 2004; Fombrun & Rindova, 2000)
Outcome-based Evaluation	
Trust	To what extent transparency enhances the level of trust among the participants and helps to foster long-term relationships (Grimmelikhuijsen, 2012b; Hood & Heald, 2006).
PUBLIC PARTICIPATION	
Process-based Evaluation	
Inclusivity	To what extent the public participation process has involved all relevant stakeholders, including the affected ones and those who have an interest on the issue (Dietz & Stern, 2008; Rowe & Frewer, 2004; Valkenburg & Cotella, 2016).
The quality of deliberation	Ability to question claims and assumptions and active participation in problem formulation and decision making process (Beierle, 2010; Dietz & Stern, 2008).
Outcome-based Evaluation	
Influence on decision	To what extent the public's concern and interest are taken into account (Beierle, 2010; Bond et al., 2004; Rowe & Frewer, 2000).
Public education	To what extent the public participation process enhances knowledge and awareness (Beierle, 1999; Bulkeley & Mol, 2003; Creighton, 2005; Pretty, 1995; Webler, 1995).

These indicators will be utilized as a conceptual framework for evaluating transparency and public participation for the purposes of this case study. The evaluations and discussions are presented in Chapter 5 and 6 of this thesis, respectively.

3.4 Conclusion

The discussion in this chapter comprised two major parts. First, the experiences of renewable energy governance in other countries in the region and beyond were explored. Governance approaches and the success of the transition to renewable energy in Thailand, Australia and Germany were highlighted. Notwithstanding the diverse governance approaches adopted by these countries, some common factors that determined their high levels of success could be identified. Strong political commitment and collaborative governance processes were found to be the key factors that were responsible for improving the quality and legitimacy of the decisions made in these cases, thereby allowing for the mobilization of greater levels of support from all stakeholders.

In the second part of this chapter, the analytical framework for this study was outlined. This chapter proposed a framework to evaluate transparency and public participation in governance practice. A set of evaluation indicators were also developed to operationalize the investigation of renewable energy governance in Indonesia. These will be presented in chapter 7. In the next chapter, the research methodology and the approach adopted in conducting this research will be discussed.

CHAPTER 4
RESEARCH METHODS

4.1 Introduction

This chapter describes the research methodology used in investigating renewable energy governance in Yogyakarta. It consists of eight sections. The first section presents the paradigm of the study and the rationale for selecting pragmatism as the underpinning philosophy. Next, the rationale for selecting the case study method as a research strategy is discussed. The third section describes the methods for collecting data, which is followed by a discussion about the selection of research participants in the fourth section. The fifth section elaborates on the thematic analysis applied in this study. Then, the sixth section addresses significant concerns about the validity, reliability and generalisability of the study. Finally, issues regarding the ethics of the research are discussed.

4.2 Research Paradigm

A research paradigm reflects how the researcher perceives a problem and the world view that determines the construction of the research. M. Patton (2002, p. 69) defines a paradigm as *"a way of thinking about and making sense of the complexities of the real world".* Guba and Lincoln (1994, p. 105) describe a paradigm as *"a basic belief system or worldview that guides the investigator, not only in choices of method but in ontologically and epistemologically fundamental ways"*. Furthermore, Guba and Lincoln (1994) claim that a paradigm comprises three basic systems namely: ontology (how truth or reality is defined by the researcher), epistemology (how truth or reality is revealed) and methodology (the approaches being used to reveal truth or reality).

The paradigm of this research is determined by the objectives of the study. As discussed in Chapter 1, the study aims to investigate transparency and public participation practices and

to evaluate their implementation within the context of the policy process and policy outcomes. The study rests on the assumption that there is an external reality that needs to be explored; that the data and evidence gathered by the researcher can then be explained by a range of relevant theories.

In ontological terms, the world view that underlies this study and which frames how it interprets the research problem conforms to that of pragmatism. As a research paradigm, pragmatism perceives that there can be multiple realities that are open to empirical inquiry (Creswell & Clark, 2017). Hence, pragmatism sees that reality cannot be determined once and for all (Pansiri, 2005), that it is subject to exploration and that it can be encountered through human experience (Tashakkori, Teddlie, & Teddlie, 2008). In this sense, adopting a pragmatist paradigm allows this study to reveal causal relationships of complex phenomenon through the perspective of research participants (Greene, 2007).

The ontological stance - how the researcher perceives the truth or reality - influences the epistemological orientation of the research or how the researcher will produce the knowledge or uncover reality. Epistemologically, pragmatism perceives that the way in which knowledge constructs reality is mediated by experience, training and culture where its content and contexts are dynamic (Greene, 2007). Further, pragmatism views knowledge as an instrument that can be useful for action and that enables us to make changes to improve the situation (Goldkuhl, 2012). Likewise, this study attempts to understand the relationship between governance practice (i.e., transparency and public participation) and its outcomes in the Indonesian context. By understanding these causal relationships, this study also seeks to foster change, to enhance transparency and to encourage public participation in renewable energy governance practice. These aspects of governance are determined by multiple factors which must be identified and explored.

The ontological and epistemological paradigm, therefore, determines how the study is conducted. Pragmatism is flexible in its system. It allows a researcher to choose what methods, techniques and procedures of research are suitable for the needs and objectives of the study (Creswell, 2013). D. L. Morgan (2007) states that it is researchers who must decide which research questions they will pursue and what methodology they will adopt, and that in making such choices they are influenced by their socio-political status, personal background and belief system. In a similar vein, Tashakkori et al. (2008) note that a researcher's selection of a particular research approach is determined by the research objectives and questions.

In general, research approaches can be divided into two main groups, namely quantitative and qualitative (Tashakkori et al., 2008). These approaches generally align with two contrasting worldviews on the nature of truth or reality. Quantitative approaches are generally used for research that assumes that there is only a single truth that is absolute and waiting to be revealed through objective measurements. Qualitative approaches are frequently used in research that sees truth as having multiple valid perspectives that can be found through interpretation and that depend on the meaning attached to them (i.e.: human experience) (W. L. Neuman & Robson, 2007). Hence, these approaches have different methods for investigating and understanding social reality (W. L. Neuman & Robson, 2007). However, it is important to note that there is no theory or paradigm that is able to capture the world's complexities completely (Maxwell, 2008).

This thesis draws on qualitative research methods. The objective of this study is to investigate and obtain an in-depth understanding of a social phenomenon. Multiple perspectives of renewable energy stakeholders are explored in order to understand the current practice of renewable energy governance in Indonesia. Therefore, a qualitative method is perceived to be the most appropriate approach. Ritchie, Lewis, Nicholls, and Ormston (2013) argue that

a qualitative approach enables the researcher to obtain an in-depth and interpreted understanding of a social phenomenon by exploring the social and material circumstances, experiences, histories and perspectives of research participants. Information from the participants is significantly valued and has a crucial position in the research process (Ebbs, 1996). In addition, a qualitative approach facilitates an iterative inductive-deductive process allowing a more open analysis between theoretical concepts and empirical evidence (Buchecker, Hunziker, & Kienast, 2003).

4.3 Case Study Approach

A case study approach is utilized in this research as a strategy to explore and describe events in everyday contexts. The case study method is commonly used in qualitative research. As Flyvbjerg (2011) observes, many things that we know today about the empirical world have been produced by case study research. Guided by scholars such as Yin (2018), Crowe et al. (2011) and Creswell (2013), the case study approach has been adopted for this research for the following reasons: (1) the research aims to answer “how” and “why” questions, (2) the researcher has little or no control over the event or phenomenon being studied, (3) contemporary events are the focus of investigation, (4) multiple data sources are used and (5) this method is widely used in the social sciences.

By asking the questions “how” and “why” this study will seek to unravel the complexities of renewable energy governance processes in Indonesia. This research aims to obtain an in-depth understanding of the existence and levels of transparency and public participation in governance practice and to explain the causal link between governance practice and the outcomes in the energy sector. Adopting a case study approach allows this study to identify the factors that determine the effective implementation of transparency and public

participation. A case study is appropriate for research that seeks to understand complex, contemporary events where multiple factors can be potentially significant (Stake, 1995).

A case study approach is used to investigate a set of events where the researcher has little or no control, in contrast with laboratory conditions. In this regard, the researcher occupies an independent position when seeking to understand how governance processes occur in practice. The researcher is outside of the system, has no control over the governance processes of renewable energy development in Indonesia or in Yogyakarta in particular.

Another reason for using a case study approach is because the focus of the research is on a contemporary phenomenon. Renewable energy development in Indonesia is an ongoing issue; the improvement of renewable energy utilization is stipulated in the current National Energy Plan. Furthermore, initiatives to develop renewable energy have also become an issue at the provincial level. Hence, many actors involved in the renewable energy development are currently in their positions. In line with the objective of this study, the utilization of the case study method, through using data obtained from interviews or focus group discussions, will enable the study to explore the perspectives of these actors or stakeholders in-depth and to explain their behaviour within its real-life context.

Furthermore, a case study allows the researcher to use multiple data sources (Creswell, 2013; Crowe et al., 2011; Stake, 1995; Yin, 2018). Yin (2018) asserts that the evidence or information can be collected through multiple methods including documentation, archives, interviews, direct observation, participant observation and physical artefact. The utilization of multiple data sources can enrich the study not only by allowing for a more detailed picture and in-depth explanation, but also by allowing for data triangulation to address concerns regarding validity and reliability. Further discussion about the validity and reliability of the research will be presented in Section 7.

A case study approach has been widely adopted by scholars when studying governance and policy making processes in the Indonesian context. Among these studies are those by Kristiansen, Dwiyanto, Pramusinto, and Putranto (2009), Patunru, McCulloch, and von Luebke (2012), Rosser and Sulistiyanto (2013), Gunningham (2013), Marquardt (2014), Maulidia, Dargusch, Ashworth, and Wicaksono (2019) and Budiman and Smits (2020). To provide general information regarding the operationalisation of this case study, this section will focus on two examples of studies conducted by Kristiansen et al. (2009) and Marquardt (2014).

Kristiansen et al. (2009) conducted a qualitative case study in six districts in Indonesia. Their research aimed to investigate the development of good governance practice in Indonesia. Adopting a case study approach enabled the researchers to reveal the quality and impact of transparency practices in local budgeting processes. Data and information were gathered through multiple data collection methods. The in-depth interviews were conducted by a team of researchers with around 200 participants from three stakeholder groups, namely the executive, the legislative and civil society representatives. Focus group discussions were held at the end of data collection to present and discuss the preliminary findings of the research. Focus group discussions were attended by bureaucrats, politicians and civil society organisations. In addition, the study gathered information from secondary data sources such as official documents and regulations. In this regard, the study presents an in-depth understanding and rich picture regarding the implementation of transparency practice at subnational levels.

Marquardt (2014) used the case study method to explore multi-level governance practice and its impact on Indonesia's renewable energy development. Indonesia was selected as a case due to its decentralized government system. Interviews were conducted with 50 participants from central and local governments, renewable energy business, the state electricity

company (PLN), academia, NGOs and development agencies. The utilization of a case study as a research method enabled the study to depict the complexities of the energy system in Indonesia including the key actors and the interaction among stakeholders. The case study approach also enabled the study to identify critical obstacles to renewable energy development. It is important to note that while the study of Marquardt (2014) took place in a similar location to my research and adopted a similar approach, the focus and objectives of this study are different. The current research focuses on the implementation of transparency and public participation and takes Yogyakarta as a case study, a location which was not covered by earlier studies including Marquardt (2014).

The two existing case studies of governance processes in Indonesia demonstrate that a case study approach can help to capture the complexities of events and to understand phenomena that arise from or contribute to a governance process or system. The utilization of multiple data collection methods such as interviews, focus group discussions and secondary data has enabled me to obtain rich and detailed information from multiple perspectives as well as to triangulate data so as to ensure more robust findings. Moreover, researchers can use different approaches in order to adapt with their plan, purpose, and resources. For instance, Kristiansen et al. (2009) conducted focus group discussion in order to clarify interview results while Marquardt (2014) only employed interviews as the primary method of data collection.

4.4 Methods of Data Collection

A range of data collection methods were applied to explore multiple perspectives and to gain an in-depth understanding of renewable energy governance in Indonesia. This includes primary and secondary data sources. Primary data was obtained through interviews, focus group discussion and observation while secondary data was gathered mainly from official reports, publications and news articles.

4.4.1 Interviews

This study utilizes interviews as the main method for data collection. The interview is the most common data collection method used in qualitative research (Bryman, 2016). Through interviews, a researcher can collect information which cannot be obtained through direct observation, such as feelings, thoughts, intentions, knowledge and experience (M. Patton, 2002). In addition, Chambliss and Schutt (2018) claim that interviews enable a researcher to gather detailed in-depth information with respect to the participant's experience and perspectives. Hence, from the interview process, this study expects to obtain multiple perspectives from diverse stakeholders regarding the governance of the decision making process in the case of renewable energy.

There are many types of interviews, such as structured, unstructured, semi-structured, standardized, focused, oral history and life history interviews (Bryman, 2016). Structured interviews and standardized interviews are usually associated with quantitative research where interview questions are detailed, developed in advance, mainly consist of closed questions and involve a large number of participants, thereby allowing the data to be aggregated (Denscombe, 2009; Yin, 2018). Structured interviews therefore have certain strengths including time efficiency, limited subjectivity and bias from the researcher, greater ease for coding processes and for comparing and analysing the results (Holloway & Galvin, 2016). However, structured interviews limit the amount of detail obtained and the scope for elaboration in order to achieve an in-depth understanding of the events or phenomenon.

The in-depth interview with semi-structured questions was adopted as the main data-gathering strategy of this thesis. Chambliss and Schutt (2018) define an in-depth interview as a qualitative data collection technique that uses open-ended or semi-structured questions to enable a researcher to obtain complete information regarding their experiences and perceptions. Dearnley (2005) suggests that semi-structured interviews can be conducted

within a flexible framework, since while the questions asked are based on interview guidelines, there is no defined order of the questions. It means that the ordering of subsequent questions is determined by the participant's responses. It also gives the researcher the opportunity to follow-up interesting points of information that may arise during the interview. In addition, through this approach, the researcher can clarify conflicting information and have the information verified directly by the participants (Harrell & Bradley, 2009). In conducting the interviews, this study followed seven stages developed by Kvale (1996): thematizing, designing, interviewing, transcribing, analysing, verifying and reporting.

The use of semi-structured interviews has enabled the study to explore the perspectives and experiences of participants in the policy making process and the process of establishing renewable energy power plants. It allowed the researcher to clarify inconsistent information as well as to follow-up issues related to the implementation of transparency and public participation. In conducting the interviews, most responses were recorded using a recording device. However, on some occasions, the researcher used hand-written notes in situations where participants were not comfortable with being recorded. Interviews were mostly conducted in the participant's workplace. To manage confidentiality, this research did not disclose the identity of the participants. Participant's details are kept secure and can be retrieved if required for further inquiry or updates.

The interviews were conducted with three main groups of stakeholders: public sector, private sector and civil society organisations from June to September 2018. In total, there were 26 participants involved in the interviews and group discussions. Kvale (1994) argue that in a qualitative study, the number of interviewees is too small to make statistical generalization and too large to make in-depth analysis. The number of participants depends on the purpose of the study. This study aims to investigate renewable energy governance by exploring stakeholders' perspectives. Although the number of participants is relatively small, the study

has sought to ensure that different perceptions have been pooled. Participants were selected from diverse organisations and stakeholder groups. From the public sector, interviews were conducted with participants from energy-related ministries, Yogyakarta provincial government and district government. From the private sector, three participants from private renewable energy developers were interviewed. From civil society, interviews were conducted with participants from NGOs, experts and with a number of local people. The interviews involved multiple stakeholders with diverse backgrounds who were chosen based on their roles in and knowledge of renewable energy development.

4.4.2 Focus Group Discussion

In addition to interviews, this study also used focus group discussion as a method of data collection. Focus group discussion is a technique where a group of individuals is assembled by the researcher in order to discuss specific topics, thereby enabling them to draw from their complex personal experiences, beliefs and perceptions (O. Nyumba, Wilson, Derrick, & Mukherjee, 2018). It provides an opportunity to learn how participants collectively make sense of an event and construct meaning around it (Bryman, 2016). In this regard, it allows for more naturalistic responses from participants than individual interviews as the process allow participants to tailgate on each other's ideas. Since participants have the opportunity to add details or challenge the information conveyed by others, this will benefit the research by allowing it to obtain richer and more valid information.

In this thesis, a focus group discussion was conducted with officials from the Planning Agency and the Finance Bureau in the provincial government of Yogyakarta. The views of these institutions are important for the study as both institutions perform strategic roles in regard to renewable energy development in Yogyakarta. The Planning Agency is the key institution that designs the strategic and development plans of Yogyakarta, including formulating policies and programs to support renewable energy development in the province. Meanwhile,

the Finance Bureau has a crucial role in formulating the provincial budget, including the amount that a province allocates to the renewable energy sector. Both institutions also shared their perspectives regarding the current condition and future of renewable energy in Yogyakarta and how coordination with other stakeholders such as central government, NGOs, universities, private entities and local communities took place.

In total, five participants were involved in the focus group discussion, three officials from the Financial Bureau and two officials from the Yogyakarta Province Planning Agency. The focus group discussion was held in the office of the Finance Bureau. The discussion was audio recorded and then transcribed.

4.4.3 Observation

Observation is another information source that can be used when doing case study research. Yin (2018) says that the evidence obtained from observation is useful to complement or add new dimensions to a researcher's existing data. Observation enables a researcher to capture a specific aspect of life that cannot be accessed by other data collection methods such as process, attitude and the behaviour of the interviewed participants (S. J. Morgan, Pullon, Macdonald, McKinlay, & Gray, 2017). Hence, it can help a researcher in shaping the argument or analysis. In addition, this method can benefit the study by complementing the evidence obtained from other data collection methods as well as by providing a further opportunity for triangulation to assess the validity and reliability of other evidence sources (Sarantakos, 1998).

The researcher observed one public forum. The objective was to gain firsthand experience and insight about public participation practice in Yogyakarta. The observation was conducted at a forum called Aspirasi Rakyat Jogja Istimewa (ARJI) or The Aspiration of Yogyakarta People held in July 2018. ARJI is a weekly forum held every Friday by the Parliamentary Office. As a thematic forum, subjects of the discussion vary every week. Different

stakeholders were involved in this forum. Parliamentary members, officials from provincial government and experts were seated as the panellists, while the local community, approximately 20 people, were the audience. In conducting this observation, the researcher sat as a spectator, taking notes on how the discussion proceeded and how the interactions between panellists and the audience emerged. By observing this public forum, the researcher was able to complement other information sources regarding the provincial government's commitment to good governance practice. It also enabled the researcher to investigate the quality of the public participation process in Yogyakarta.

In addition, observation was also employed during interviews and focus group discussion. Yin (2018) terms this "less formal" observation where the process of observation is done when other data collection methods, such as the interview, are being used. Musante and DeWalt (2010) note that such observation helps to capture nonverbal responses and to provide the researcher with a better understanding of the context and phenomenon of the study. In regard to this study, observation conducted during interviews with the participants aimed to get a better understanding of the behaviour and culture of local people which can potentially affect the policy or decision-making process. Yogyakarta is renowned for its monarchical system of government, one which is led by a king or *Sultan* who also acts as the governor. The system has shaped local people's attitudes, including that of the officials, leading them to defer toward people who have a higher social or working position. Hence, people tend to avoid conflict by not disagreeing or challenging the opinions of or decisions made by people in higher social positions, particularly the Sultan (Wati, 2014).

4.4.4 Documents Analysis

Another source of evidence used in this study is documentation. Merriam (1998) argues that documents can be useful as a data source, both for corroborating hypotheses and for investigating historical background. According to Yin (2018, p. 114), documents can provide

broader information about a long span of time (historical data), various events and settings. In addition, documents are relatively stable, hence the researcher can review them repeatedly. Documents also can provide specific details such as names, references and details of events which may not be captured during interviews.

According to Bryman (2016) there are five varieties of documentation: (1) personal documents, (2) state official documents, (3) private organization documents, (4) mass-media and (5) virtual outputs (internet sourced). He further adds that in order to be usable within a study, documents must be readable and understandable, produced for a general purpose (not specifically produced for the research) and relevant with the area or focus of the study.

In regard to this research, documents have been gathered from (1) the government or public sector, (2) the mass-media and (3) the internet. Official documents from the public sector consist of documents published by the central government and local governments (provincial and district). In collecting these documents, permission was sought and received from both central and local government institutions that were involved in the development of renewable energy such as the Ministry of Energy and Mineral Resources, the Ministry of Finance, the Yogyakarta Parliamentary Office, the Finance Bureau of Yogyakarta, the Department of Public Works, Housing and Energy of Yogyakarta and the Bantul Planning Agency. The documents obtained were policy briefs, presentation materials, law and regulations, government reports and booklets. Most of these documents have been published and are publicly available. However, some documents that are not publicly available due to their confidentiality were also obtained such as the minutes of meetings of the formulation of local regulations (*Perda*), research reports and the drafts of local regulations that provide insights into the decision-making process in the Yogyakarta energy sector. In addition, some government documents were also obtained through the internet. This was done by visiting the official websites of government institutions. From these websites, information such as the

ministries strategic plans, the energy outlook, regional development plans and local budgets were retrieved.

Another source of documents are the products of the mass-media. These include online news articles or magazines that provide information about renewable energy development in Indonesia and Yogyakarta. In searching for information, the study utilized internet search engines and keywords such as *energi terbarukan di Indonesia* (renewable energy in Indonesia), *pembangunan* PLTH Pantai Baru (establishment of PLTH Pantai Baru), *subsidi energi* (energy subsidies) *pembangunan* PLTMH Semawung (establishment of PLTMH Semawung), *Perda Energi Terbarukan* Yogyakarta (Local Regulation regarding Renewable Energy Yogyakarta), and *penyusunan kebijakan energi* Yogyakarta (the formulation of energy policy in Yogyakarta).

Documents were also obtained from other sources on the internet, such as blogs and social media. Information obtained included the profile of and information about energy companies that are involved in the development of renewable energy in Indonesia and Yogyakarta, personal perspectives related to the practice of transparency and public participation, as well as the personal views of individuals who have experience and knowledge of renewable energy development in Indonesia. In seeking to find this information, the researcher used search engines by employing keywords such as *desentralisasi dibidang energi* (decentralization in energy sector), *pembangkit listrik energi terbarukan Yogyakarta* (renewable energy power plants in Yogyakarta), *pengembang energi terbarukan Yogyakarta* (renewable energy developer in Yogyakarta), *pelaksanaan transparansi dan partisipasi di sektor energi* (transparency and public participation in energy sector), and *Sultan Yogyakarta dan energi terbarukan* (Sultan Yogyakarta and renewable energy).

4.5 Selection of Participants

The process of recruiting participants is an important part of the research process as they are the primary data source for the study. In selecting the participants, this study applied the purposive sampling method. Purposive sampling is a typical approach for qualitative research which aims to gain rich information about and an in-depth understanding of the topic of interest (M. Patton, 2002). In purposive sampling, the selection of participants is based on certain criteria established by the researcher in order to achieve the research objective (Bryman, 2016). In general, participants are selected based on their experience or knowledge of the issues being investigated in the study (Creswell & Clark, 2017). In addition, participants are recruited because they are available and willing to participate and can express their perspectives in an articulate and reflective manner.

With respect to my research, participants were selected on the basis that they fell into at least one of the following three categories: (1) key actors in policy making and/or the establishment of renewable energy projects, (2) have sufficient knowledge and/or experience regarding the development of renewable energy in Indonesia and (3) are available and willing to participate in the research.

As can be seen from Table 4.1, in total, there were 26 participants: 21 individuals were involved in interviews and 5 individuals were involved in a focus group discussion. Participants were either affiliated to certain organisations or were individuals with experience and knowledge whose information was valuable for this research.

Table 4.1: *Selected Organisations/Individuals*

Group of Stakeholders	Organisations	Number of participants	Methods
1. Public Sector	**Central Government:**		
	Ministry of Energy and Mineral Resources	1 officer	Interview
	Ministry of Finance	3 officers	Interview
	Provincial Government:		

	Department of Public Works, Housing, and Energy (Dinas PU)	2	officers	Interview
	Local Financial Bureau (DPPKAD)	3	officers	Group discussion
	Local Planning Agency (Bappeda) of Yogyakarta	2	officers	Group discussion
	District Government:			
	Local Planning Agency (Bappeda) of Bantul	1	officer	Interview
2. Private Sector	UPC Renewables	1	officer	Interview
	Energy Puritama	2	officers	Interview
	Quantum Energy	1	officer	Interview
3. Civil Society Organisations	Center For Energy Studies - Gadjah Mada University	1	officer	Interview
	Walhi	1	officer	Interview
	Yayasan Dian Desa	1	officer	Interview
	Energy experts	1	person	Interview
	Local people	6	persons	Interview
Total		**26**		

Public sector

The government institutions involved in this study were from the national and subnational levels. At the national level, the Ministry of Energy and Mineral Resources (MEMR) and the Ministry of Finance (MoF) were selected as research participants. MEMR is the leading agency in Indonesian energy affairs. Furthermore, the selection of the Ministry of Finance is related to the role that it plays in allocating the state budget and in providing incentives (tax) or subsidies including those for renewable energy development.

At the subnational government level, four institutions from Yogyakarta provincial government and Bantul district government were selected for investigation. Three institutions were from the Yogyakarta provincial government: the Local Planning Agency (Bappeda) of Yogyakarta, the Local Financial Body (DPPKAD) and the Department of Public Works, Housing and Energy (Dinas PU); and one institution was from the Bantul district (Local Planning Agency

of Bantul). Although the focus of this research was on the governance process at the provincial level, information from the Bantul government was considered to be important as a renewable energy project that became the object of this study was located in the Bantul area. In addition, the management of PLTH Pantai Baru was previously the responsibility of the Bantul government, before the new Law transfer energy authority from district to provincial government.

Private sector

The study decided to collect information from private energy companies involved in developing renewable energy in Indonesia. The purpose was to obtain their perspectives on how effective governance processes had been in supporting the renewable energy industry and to explore the involvement of the private sector in the policy making process. The three companies that were invited to share their perspectives were Energy Puritama, UPC Renewables and Quantum Energy.

Energy Puritama is the owner and operator of PLTMH Semawung, one of the renewable energy projects studied. Two directors of Energy Puritama were interviewed. Furthermore, UPC Renewables is a company that planned to build a large-scale wind power plant in Yogyakarta. However, the project was cancelled two years after the signing of a business agreement with Indonesia's state electricity company witnessed by President Jokowi. It is therefore interesting to seek the views of UPC Renewables on the issue of renewable energy governance. In addition, Quantum Energy was selected due to its experience in several renewable energy projects in Indonesia.

Civil society

Data was also collected from two NGOs and a university research centre for this research. The NGO participants came from Walhi Yogyakarta and Yayasan Dian Desa. Walhi is the

largest environmental NGO in Indonesia. In Yogyakarta, Walhi's movement focuses on monitoring the government's development programs particularly those that will potentially have a detrimental effect on the environment or on local people. Recently, Walhi has been active in resisting development in the Gunung Sewu Karst area because mining activities and hotel construction for tourism in this area have caused significant damage to the environment. The other NGO from which data was collected was Yayasan Dian Desa. This NGO actively promotes the use of sustainable energy in Yogyakarta, particularly in rural areas. Interviews were conducted with the director of Walhi and with an official from Yayasan Dian Desa.

The Centre for Energy Studies from Gadjah Mada University (UGM) was also selected for data collection due to their experience and expertise regarding renewable energy development in Yogyakarta and Indonesia. An interview was done with the director of the Centre for Energy Studies. The information that was obtained from this interview concerned recent government policies to develop renewable energy and problems that had emerged within the policy implementation process.

Individuals

Seven individuals were involved in this study comprising six local people and one energy expert. The four local residents who became research participants all live near and/or work in renewable energy power plants: two individuals were from PLTH Pantai and two individuals were from PLTMH Semawung. The participants in Pantai Baru were nominated by the official from the Department of Energy Yogyakarta while the participants in Semawung were nominated by the workers of PLTMH Semawung. The aim of interviewing local residents was to explore their perspectives and to obtain an in-depth explanation of transparency and public participation practice during and after the establishment of both renewable energy power plants. Meanwhile, the study also interviewed two individuals who work and live near the location of a potential renewable energy project in Piyungan. The purpose of these interviews

was to discover whether transparency and public participation were present at the early stages of project development and whether plans were communicated to the local community by the authorities.

In addition, an expert who has a long involvement in renewable energy was interviewed. His experience as an energy business consultant and in giving seminars, engaging in public discussion and providing comments to the public regarding renewable energy projects was relevant and fruitful for this study. He has also provided analysis, reports and recommendations to ministries and energy institutions.

4.6 Data Analysis

In a broad sense, data analysis can refer to a process in the management and reporting of data. Specifically, data analysis is the identification of important features and relationships by following systematic procedures (Wolcott, 1994, p. 24). In data analysis, the researcher is essentially investigating for patterns, insights or concepts that help to reach research objectives (Yin, 2018).

Data in qualitative research is usually voluminous, messy, unwieldy and discursive (Miles & Huberman, 1994). Yet there is no clear or definitive formula for analysing qualitative data. Spencer, Ritchie, and O'Connor (2003) argue that the analysis of qualitative data requires creativity, systematic inquiries and carefulness. To deal with the unstructured qualitative data, it is necessary to transform the data into a suitable format for analysis. The primary data for my research were mainly generated from interviews. Hence, full transcripts of interviews would be the most suitable format (M. Patton, 2002). In addition, interview transcripts were encoded to protect the anonymity of the participants.

Thematic analysis is employed as a method for data analysis. King (2004) asserts that thematic analysis is a useful method for examining the perspectives of diverse participants. It involves inquiring into and seeking to identify common patterns or themes and concepts across a data set (DeSantis & Ugarriza, 2000). This method is seen as providing a practical and flexible research tool as it offers a comprehensive, detailed and complex account of data (Braun & Clarke, 2006). The practicality of thematic analysis helps an inexperienced researcher to systematically code and analyse the data sets. Furthermore thematic analysis can work well with diverse theoretical frameworks and research themes (Braun & Clarke, 2006).

In general, the themes and patterns in the thematic analysis process can be developed in two ways: inductive or deductive. An inductive approach means that the codes and themes that are developed are strongly linked to the content of the data. However, Braun and Clarke (2006, p. 84) argue that *"researchers cannot free themselves of their theoretical and epistemological commitments, and data are not coded in an epistemological vacuum. On the other hand,* with a deductive approach, codes and themes are determined by the researcher's theoretical and analytical interest.

This study used a deductive approach, meaning that the themes are defined at the outset based on the researcher's analytic preconceptions. DeSantis and Ugarriza (2000, p. 362) define theme as *"an abstract entity that brings meaning and identity to a recurrent experience and its variant manifestations. As such, a theme captures and unifies the nature or basis of the experience into a meaningful whole".* Hence, the evidence obtained was divided into two major groups, namely, those of transparency and public participation, which are the two governance indicators that became the focus of investigation within the study.

The analytical process began with getting familiar with the data. This was done through reading the interview transcripts a number of times in order to be able to get a sense of what

might be interesting information and common themes. Codes were then generated based on the highlighted information. Coding is the process of managing, filtering and highlighting important features of qualitative data to produce categories, themes and concepts in order to synthesise meaning and/or build theory (Saldaña, 2015). The coding process can be done through either an automated or a manual process. In this study codes were generated manually. Although it was time consuming, the amount of data gathered was still manageable. Furthermore, manual coding gives the researcher an opportunity to get more familiar with the data which helps to conceptualise patterns and themes. Themes and codes developed in this study are presented in Table 4.2.

Table 4.2: Themes and Codes for Thematic Analysis

Main themes	Codes
1. Transparency	♦ communication ♦ access to information ♦ honesty ♦ trustworthy ♦ meaningful information ♦ comprehensive documents
2. Public Participation	♦ engagement ♦ availability of public forum ♦ quality discussion ♦ committed ♦ being heard ♦ improved knowledge

The final process of thematic analysis is producing the reports (Braun & Clarke, 2006). In building arguments, King (2004) suggests that researchers should include direct quotes from participants. Braun and Clarke (2006) argue that extraction of raw data can convince the reader of the validity and merit of the arguments presented. Furthermore, the validity of findings can be strengthened by referring back to the literature. Literature can be used to

confirm that the report is proposing plausible interpretations as well as to provide an opportunity to challenge or expand the literature (Nowell, Norris, White, & Moules, 2017).

4.7 Validity, Reliability, and Generalisability

Validity is one of the factors that determines the soundness of research (Rowe & Frewer, 2004). The concept of validity refers to the extent to which inferences made through the study of data are truthful and accurate (Craig & Hannum, 2007; L. W. Neuman, 2007). In general, concerns regarding validity revolve around the issues of whether the research questions are appropriate to the chosen research objectives, research methodology, sampling and data analysis methods (Leung, 2015).

The strategies used to ensure validity in qualitative studies have been outlined by various scholars. Denzin (2017), for example, maintains that to construct validity a researcher must avoid all forms of bias and seek to improve the truthfulness of a proposition about social phenomenon by applying triangulation methods. Furthermore, Yin (2018) identifies two strategies that can be used in constructing validity in case studies, namely using multiple sources of evidence and having key informants review draft case study reports. The utilization of multiple data sources is also emphasised by Tashakkori et al. (2008) who state that using multiple data sources helps to establish stronger evidence for building convincing conclusions.

In general, reliability refers to the replicability of the process in producing consistent results (Bryman, 2016). What this means is that a later researcher will be able to produce similar, if not the same result, by repeating the study and following the same procedures. However, repeating research in case study research is rare (Yin, 2018) as human behaviours and interactions which are the objects of the study are dynamic. Hence, the concept of reliability in qualitative research is different from the one found in quantitative research.

The different meanings that reliability has in the cases of quantitative and qualitative studies is related to the concept of good quality of research. While reliability is a concept that can be used to evaluate quality in a quantitative study that has the “purpose of explaining”, the concept of quality in the case of a qualitative study relates to the purpose of “generating understanding” (Stenbacka, 2001) cited in (Golafshani, 2003, p. 601). In addition, Sarantakos (1998) claims that the way in which a quantitative research setting seeks to create a controlled environment in order to establish a high level of standardisation will be counterproductive to qualitative research and alienate the researcher from the study and its environment.

A more effective measure needs to be employed to approach reliability in qualitative research. Rather than focusing on replicability in producing the same result, reliability in social research can be achieved by controlling the variables or subjectivity (Bogumil & Immerfall, 1985). Yin (2018) states that reliability in a case study research is attained by aiming to minimize errors and bias.

In regard to this thesis, the concern regarding validity and reliability was addressed by means of the following strategies:

- Triangulation:

  Triangulation is the utilization of multiple approaches to seek confirmation of a proposition (Heale & Forbes, 2013). Borrowing from the work of Denzin (2017) and M. Q. Patton (1999), this thesis adopts data source triangulation and method triangulation. *Data source triangulation* refers to the utilization of multiple data sources for evidence verification. In this regard, the study engaged participants from different groups or organisations in order to obtain multiple perspectives and validation of data. This will provide stronger evidence through convergence and corroboration of findings. Furthermore, a case study that uses

multiple sources of evidence is considered to be better, in terms of quality, than one that relies on a single source of information (Yin, 2018).

Method triangulation is the utilization of multiple methods for gathering evidence to investigate the same phenomenon (Polit & Beck, 2008). This study employed multiple data collection methods. These included interviews, focus group discussion, observation and documentation. Methodological triangulation enables the researcher to produce a more complete knowledge as well as to construct validity and reliability in qualitative research (Buchecker et al., 2003; Yin, 2018).

- Verbatim transcripts

  Verbatim transcript is a full transcription of an interview, as opposed to a summary of an interview. With a full transcription, it allows the researcher to reflect on the interview event and to improve their interview technique, enables an audit from a third party to occur and allows the researcher to analyse what the informants conveyed within the context of how they conveyed it (Bryman, 2016).

- Respondent validation

  Respondent validation, also known as member checking, is a technique for exploring the credibility of results by asking for feedback on data conveyed by research participants (Birt, Scott, Cavers, Campbell, & Walter, 2016; Maxwell, 2008). In this thesis, unclear information was clarified during the interviews and focus group discussion and the permission of all participants was sought for making further inquiries of them in the future. All interviewees agreed to follow-up contact.

Generalisability has been a common concern for qualitative research. Although in general the investigation of a larger number of cases can generate better generalisability than the conduct of a limited number of case studies, sometimes researchers choose to pursue other

aspects of research such as in-depth and detailed explanation rather than generalisability (Stake, 1995). This is generally the case for qualitative case study research.

The concept of generalisability in qualitative studies in the sense of being representative of a larger population has been disputed by scholars as irrelevant. Maxwell (2008) argues that the concept of generalizability in qualitative studies is related more to the ability to expand the theory so that it can be extended to other cases, rather than on the extension of the study result on the basis of an explicit sampling of a population. Hence, the generalisability and comparability found in qualitative research is traded for internal validity and contextual understanding which is important to gain understanding the processes that led to specific outcomes (Maxwell, 2008). Similarly, Yin (2018) states the goal of a case study research is to expand and generalize theories, rather than to extrapolate probabilities or to make statistical generalizations.

In regards to my study, the concept of generalisability is approached through developing and testing theories. A range of theories and concepts were applied to investigate the implementation of transparency and public participation in Indonesia's renewable energy governance practice. The role of theories in the case study has allowed it to refine and develop theories in what (Yin, 2018) has labelled a process of "analytic generalization", or one which involves modifying or advancing theoretical concepts applied in the study or establishing new concepts after the completion of the study.

4.8 Ethics

The issues of anonymity and confidentiality are important to ethical research practice. Hence, it is necessary that the researcher ensures that the information conveyed by the participants cannot be traced back to them in any forms of dissemination such as reports and presentations (Crow & Wiles, 2008). Anonymity can be referred to as the degree to which the

identity of a person who takes part in the research is unknown and unspecified. Scott (2005, p. 243) claims that the harder it is to specify who the source is, the more anonymity exists. Furthermore, confidentiality is perceived as involving the non-disclosure of personal information about the research participants that can reveal their identity (J. Lewis, Ritchie, & Ormston, 2003). In practice, ensuring confidentiality often means protecting data through physical means such as locked cabinets, password protected devices, confidentiality statements or methodological means such as coded files (Whelan, 2007). In regard to this thesis, all participants involved were kept anonymous. In addition, the audio files and interview transcripts are kept in a locked and password protected device.

Before the interviews and the focus group discussion were conducted, the participants were given the informed consent letter. This provided information about the general topic of the inquiry, its study objectives, the basic procedures, the researcher's identity including organisation, contact name and address and a guarantee that all information provided by participants will be kept confidential. Participation was voluntary. Participants could refuse to answer any questions and were free to withdraw from the interview at any time without effect or consequences.

This study was approved by the Flinders University Social and Behavioural Research Ethics Committee (SBREC) on February 12th, 2018 (Project Number 7831). Permission to conduct research in Yogyakarta was granted by the Ministry of Home Affairs of the Republic of Indonesia. Permission to conduct interviews and to collect documents was also obtained from all selected institutions at a national and local level.

4.9 Conclusion

This chapter discussed the research methodology applied in the thesis. This research employs the case study method as a research strategy in order to explain and explore

phenomena in their everyday context. By such means we can gain an in-depth understanding of the roles that transparency and public participation can play in shaping renewable energy governance in Indonesia. Multiple data collection methods, including interviews, focus group discussion, observation and documentation, were employed to establish broader and stronger data in order to support convincing conclusions. Research participants were selected by utilizing the purposive sampling method. Multiple stakeholders from organisation and individuals were studied in order to obtain rich information and an in-depth understanding of the topic being investigated in this thesis.

Data obtained was analysed by using the thematic analysis method in order to interpret and extract meaning and concepts. A deductive approach was utilized where evidence from three main groups of stakeholders (public sector, private sector and civil society) was divided into two major themes, namely transparency and public participation. This chapter also provided an explanation of how the thesis intends to achieve validity, reliability and generalisability.

In the next chapter, the thesis will present background information about the case study. General information and an overview of governance practice and of the energy sector of Yogyakarta will be elaborated, which will then be followed in the subsequent chapters by a discussion of the findings and of the data analysis process.

CHAPTER 5
THE SPECIAL REGION OF YOGYAKARTA

5.1 Introduction

This chapter provides information about the Special Region of Yogyakarta that will be relevant to the analysis and discussion of the thesis contained in chapter 7. This chapter presents general information about Yogyakarta, its governance and its energy profile.

This chapter consists of four major sections. The first is an overview of the Special Region of Yogyakarta which includes information about history, geography, population, economy, Human Development Index and the special character of Yogyakarta. The second section provides information about key actors in the governance process and continues by elaborating upon Yogyakarta's governance index in transparency and public participation, which will be the focus of the third section of this study. Lastly, it will provide an overview of the energy profile in Yogyakarta which includes the potential of renewable energy resources, existing policies and the surplus of electricity.

5.2 Historical Context and Profile of the Special Region of Yogyakarta

5.2.1 Historical Context

Yogyakarta is the only province in Indonesia that is led by a Sultan or King. The Yogyakarta sultanate began after the Giyanti Agreement in February 1755 which was aimed at ending the conflict over the throne of the Mataram Kingdom. The agreement was between Prince Mangkubumi and Susuhunan Paku Buwono III (Harsono, 2018; Pratama, 2019). As a result, the Kingdom of Mataram was divided into two sultanates, Surakarta on the eastern part ruled by Paku Buwono III and Yogyakarta on the western part ruled by Mangkubumi or Sultan Hamengkubuwono I. This territorial arrangement between the two sultanates remains in

place until today. Yogyakarta stands as a province, while Surakarta is known as Solo becoming the district of Central Java Province.

The sultanate of Yogyakarta became part of the Republic of Indonesia on 5 September 1945. At that time, Yogyakarta could have refused to join Indonesia and have established its own government, but Raden Mas Dorodjatun, youth name of Hamengkubuwono IX, who was also known as a radical nationalist, decided that Yogyakarta should become part of the Republic of Indonesia (Tempo, 2015).

The decision that Yogyakarta should become part of Indonesia was made in September 1945, established through the mandate declared by Sultan Hamengkubuwono IX who was the king of Yogyakarta at that time. The mandate explicitly states that the kingdom of Yogyakarta is part of the Republic of Indonesia. The mandate also mentions that the Sultan has absolute power to govern the local affairs of Yogyakarta. Because of this provision, until today, the Sultan is automatically the governor of Yogyakarta. Except in 1988 when Hamengkubuwono IX died and he was replaced by his son, Hamengkubuwono X who was crowned as the Sultan in 1989. However, Hamengkubuwono X declined the role of governor. Pakualam VIII was asked by Soeharto, the President of Indonesia at that time, to be an acting governor for Yogyakarta. Pakualam VIII died in 1998 and the crown was returned to Hamengkubuwono X. Until today, the governor and the sultan of Yogyakarta is under the administration of Hamengkubuwono X.

The monarchy system of Yogyakarta survived the wave of political transformations in Indonesia from the Dutch colonial era until today. Even after the reformation era in 1998, when the march of democratization swept throughout the country and the reform of 2004, when a direct election mechanism for choosing the head of regions was introduced, the monarchy system in Yogyakarta has remained unaltered.

5.2.2 Geography

The Special Region of Yogyakarta is located in the south central part of Java Island. It shares a border with the province of Central Java in the north, west and east of the region. On its southern perimeter, Yogyakarta is surrounded by the Indian Ocean. Yogyakarta is the second smallest province in Java Island after Jakarta with a total area of 3,185.8 km^2 or 0.17 percent of the land area of Indonesia (BPS Yogyakarta, 2019a). The location of Yogyakarta is shown in Figure 5.1.

Figure 5.1: The Location of Yogyakarta

Source: www.commons.wikimedia.org/wiki/File:Special_Region_of_Yogyakarta_in_Indonesia.svg

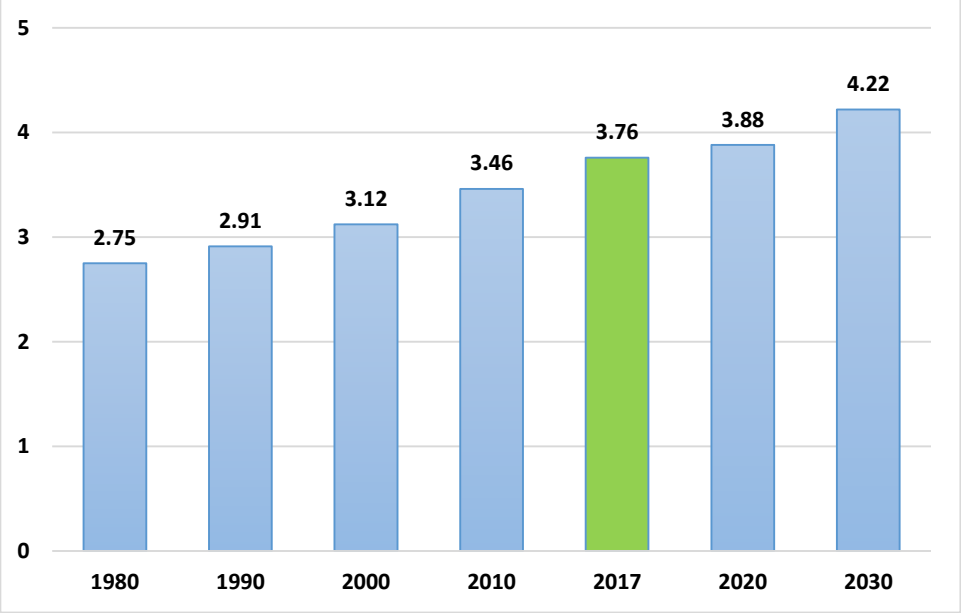
The topography of Yogyakarta is a combination of coastal areas, plains and hilly areas. Yogyakarta mostly lies in the plains (75.57%), while slopes or hillbacks and valleys or watershed areas are estimated at around 24% and 0.5% respectively (BPS Yogyakarta, 2018c). Being located south of the equator, Yogyakarta is a tropical region which has two seasons: dry and rainy. The weather of Yogyakarta is characterised by generally high temperatures with high humidity and rainfall.

5.2.3 Population

Yogyakarta has five administrative districts, 78 subdistricts (*kecamatan*) and 438 villages (*kelurahan/desa*). Those 5 districts are Kulon Progo, Sleman, Bantul, Gunung Kidul, and Yogyakarta City as the capital city.

In 2017, the population in Yogyakarta was 3.76 million with the proportion of men and women standing at 49 percent and 51 percent respectively (BPS Yogyakarta, 2018c, p. 60). As can be seen from Figure 5.2, the number of people in Yogyakarta has increased over time with population growth of 1.17 percent from 2010 to 2017. In 2030, the population is predicted to reach 4.22 million people.

Figure 5.2: Population in Yogyakarta



Source: (BPS Yogyakarta, 2018c)

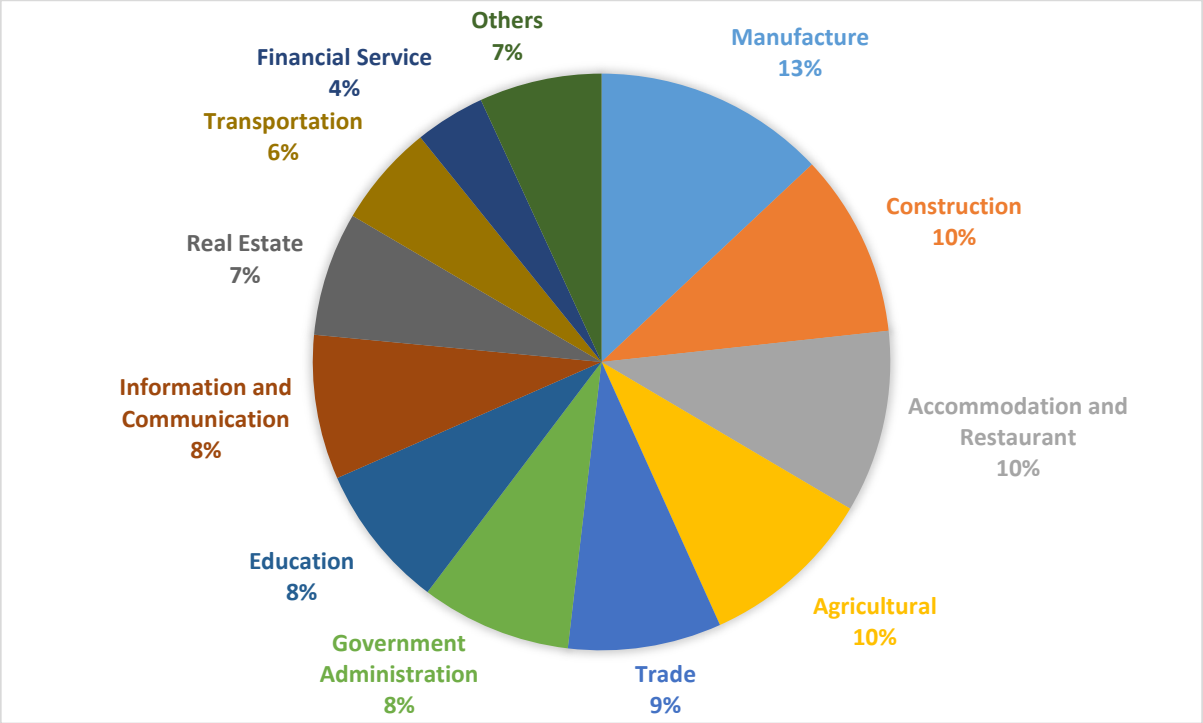
The largest population is concentrated in the district of Sleman with approximately 1.2 million people. While Kulon Progo and Yogyakarta city are the least populated with 421 thousand and 422 thousand people respectively (BPS Yogyakarta, 2018c, p. 60).

In terms of population density, Yogyakarta is the third densest province after Jakarta and Banten (BPS Yogyakarta, 2019a, p. 31). Within the province Yogyakarta City, which is the capital city of Yogyakarta, is the densest region with 13,000 people/km^2 and an area of only around one percent of the total area of DIY. This number is much higher than the second densest region, Bantul with 2,076 people/km^2 (BPS Yogyakarta, 2018c). This indicates the high urbanisation rate in the city of Yogyakarta where urban areas grew more rapidly than surrounding rural areas (Rana & Marwasta, 2015). Furthermore, Gunung Kidul is the district with the lowest density with 491 people/ km^2 (BPS Yogyakarta, 2018c). This condition is due to the topography of the region which mostly consists of hills with limited water sources.

5.2.4 Economy

The structure of the economy in Yogyakarta has changed in the last few decades. Agriculture, which was the dominant sector in contributing to economic growth in the early development period, has been gradually eclipsed by the service-business sector and manufacturing. Figure 5.3 depicts the contributions made by various sectors to Yogyakarta's economy. It can be perceived that the economy is not dominated by certain sectors. According to BPS Yogyakarta (2019b), the biggest contribution is made by the manufacturing sector with 13 percent. This is followed by the construction, accommodation and restaurant and agriculture sectors, with each sector contributing 10 percent to the economy.

Figure 5.3: The Economic Structure of Yogyakarta 2018



Source: (BPS Yogyakarta, 2019b)

Yogyakarta can be considered as a good performer in terms of economic growth. The province has had better economic growth than the national average for economic growth. BPS Yogyakarta (2019b) reports that in 2018, Yogyakarta's economic growth rate was 6.2 percent which is significantly higher than national economic growth rate of 5.17 percent. This growth was mainly driven by the construction sector, the information and telecommunication sectors, the manufacturing sector, the hotels and restaurants sector and the education services sector.

However, poverty is still a big issue in Yogyakarta. In 2017, Yogyakarta has the highest percentage of poor people on Java Island with around 11.0% of Yogyakarta's population (BPS, 2019). Most poor people are concentrated in the two districts of Kulon Progo and Gunung Kidul District with poverty rates of 20.0% and 18.6% respectively. Whereas,

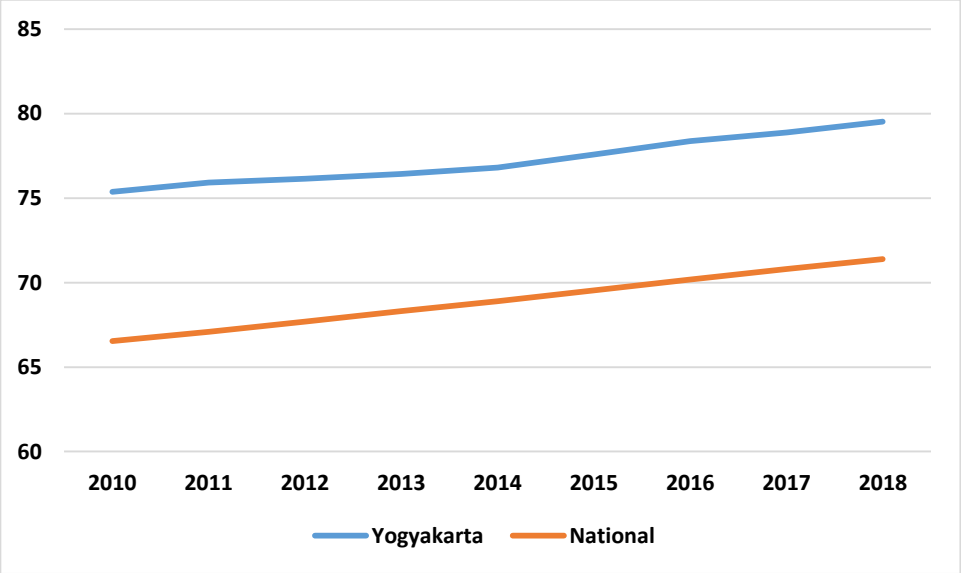
Yogyakarta city and Sleman poverty rates are the lowest with 7.6% and 8.1% respectively (BPS Yogyakarta, 2018b).

Additionally, the high levels of urbanisation within Yogyakarta City have resulted in a higher level of income inequality in Yogyakarta than the national average. In March 2018, Yogyakarta's Gini coefficient was 0.44, higher than the national coefficient of 0.35. This is mainly because economic activities are concentrated in Yogyakarta city and Sleman whereas the progress in other districts is much slower (BPS Yogyakarta, 2018b).

5.2.5 Human Development Index (HDI)

The quality of human development in Yogyakarta can be categorized as high performance. Yogyakarta has the second highest Human Development Index (HDI) in Indonesia after Jakarta. Figure 5.4 compares the HDI in Yogyakarta with the national HDI figure. In general, the development of HDI in Yogyakarta shows the same pattern with the national HDI. In 2018, HDI in Yogyakarta was 74.8 which was considerably higher than national average with 70.8 (BPS Yogyakarta, 2019a, 2019b).

Figure 5.4: Human Development Index: Yogyakarta and National



Source: (BPS Yogyakarta, 2019a)

HDI is a composite index that synthesizes three basic dimensions of human development namely: health, education and living standards.

Health dimension

The health dimension has central role in determining human well-being. According to BPS Yogyakarta (2019a), among many indicators in the health sector, life expectancy at birth is considered to be a relevant indicator in describing the general quality of the population's health and is a contributing component in measuring Human Development Index.

Yogyakarta has the highest life expectancy at birth among 34 provinces in Indonesia. In 2018 the average life expectancy at birth in Yogyakarta reached 74.82 years which shows the estimation of a new born baby's life span in Yogyakarta (BPS Yogyakarta, 2019a). In general, this indicates a higher than average level of health among Yogyakarta's people.

There has been an improvement in terms of health infrastructure. According to BPS Yogyakarta (2019a) from 2010 to 2017, the number of hospitals in Yogyakarta has increased from 63 to 79. As a result, the availability of beds in hospitals has also improved by just over 3.5 percent per year. Furthermore, the government has intensified the role of Community Health Centre or *Puskesmas* in order to provide health services in local neighbourhood/villages and remote areas. Until 2017, there were 121 units of *Puskesmas* in Yogyakarta. On average there are 1 or 2 *Puskesmas* in each sub-district in Yogyakarta (BPS Yogyakarta, 2019a). The provision of health services is also supported by the private sector. The private sector has become increasingly involved in providing infrastructure and medical services.

Education dimension

Education is one of key elements in determining human well-being in terms of productivity and competency levels. In measuring HDI, two indicators are used, namely, expected years

of schooling for seven year old citizens and mean of years schooling for citizens older than 25 years (BPS Yogyakarta, 2019a).

The expected years of schooling in Yogyakarta increased from 14.2 years in 2010 to 15.6 years in 2018. This means that the average citizen is expected to be studying in formal education for 15.6 years or equal to the university level which is the highest among other provinces. Additionally, mean of years schooling has also improved from 8.5 years in 2010 to 9.3 years in 2018. This shows that the average years of schooling for citizens older than 25 years is 9.3 years or equal to secondary school level. This number is higher than the national average of 8.2 mean years of schooling in 2018. In general, the increases revealed by both indicators demonstrate improvement in human capital in Yogyakarta (BPS Yogyakarta, 2019a).

In terms of the literacy rate, 99.91 percent people aged 15 – 44 possess reading and writing skills. This percentage is slightly higher than the national average literacy rate for the same age category of 99.14 percent (BPS Yogyakarta, 2019a).

The satisfying educational statistics in Yogyakarta are not surprising. Yogyakarta is well known among the school-aged population from various provinces, especially at secondary and tertiary levels, as the destination province in which to pursue education. Yogyakarta also has the nickname of “Student City” where reputable schools and universities are located. BPS Yogyakarta (2019a) argues that the existence of education facilities has indirectly contributed towards the high expected years of schooling in Yogyakarta.

Standard of living dimension

The third dimension of HDI is the standard of living that is based on the adjustment of per capita expenditure with purchasing power parity (PPP). According to BPS Yogyakarta (2019a), per capita expenditure has shown an increasing trend from Rp12.1 million in 2012

to Rp13.95 million in 2018. This improvement reflects a better living standard and purchasing power in Yogyakarta. The amount of per capita expenditure in Yogyakarta is the third highest in Indonesia after Jakarta and Riau Islands province.

Furthermore, social programs from central and local governments such as cash transfer, Family Hope Program or *Program Keluarga Harapan* (PKH), rice for the poor and other form of subsidies are implemented as safety nets to keep the stability of people's purchasing power. These social programs are prioritized for low-income families.

5.2.6 The Special Status of Yogyakarta

As mentioned in section 5.2.1, Yogyakarta is a sultanate province. The special status of Yogyakarta has recently been emphasized through the enactment of the Law number 13/2012. The law specifically arranges the privileges of Yogyakarta. There are five areas of privileges namely gubernatorial status and election, local governmental institution, cultures, spatial planning and land ownership.

First, Yogyakarta is the only province in Indonesia that does not hold a gubernatorial election. The Sultan who is the king of Yogyakarta acts automatically as the head of administration or the governor, while Adipati Pakualam serves as the vice governor. Thus, the Sultan of Yogyakarta acts both as the traditional leader and as the governor. The Sultan inherited his throne from his father who was the former leader of the kingdom of Yogyakarta which had territorial limits identical to those of modern Yogyakarta. By contrast, in other provinces, the governor attains office by means of direct elections that are based on the principle of 'one man one vote'. Both Sultan and Adipati Pakualam should not be affiliated with any political party.

On the other hand, at the sub-provincial or district level in Yogyakarta, the heads of districts are selected through direct elections. This is also the case for local members who are proposed by political parties through an independent election process. The

term ‘independent’ in this context means that the provincial government or the *Keraton* should not be involved in the election or campaign process.

However, in practice, the Sultan often supports candidates implicitly through his speeches or activities. His position as a traditional ruler enables him to connect with local people and to influence their voting intentions. Thus, political parties must build a good relationship with the Sultan in order to gain his ‘blessings’ so as to increase their votes. Erb and Sulistiyanto (2009) claim that a good relationship between the Sultan and the major candidate has significantly affected the voter’s choice in the election. They also add that without support from the Sultan, the local leaders or legislatures would lose their political and cultural legitimacy.

The second area relates to the governmental institution. The law stipulates that the structure of such institutions should reflect traditional values. Currently, there is a special governmental unit that assists the governor and coordinates the affairs related to the privilege or special status of Yogyakarta. The third area relates to the culture. To date, the local people in Yogyakarta retain their traditional culture. Yogyakarta’s culture is considered to be an important asset. The provincial development plan seeks to incorporate cultural values by including programs such as cultural preservation and the development of local arts and cultures. The fourth area relates to spatial planning. The utilization of land and space in Yogyakarta should take into account cultural and social considerations and seek to provide for people’s benefits.

The last area relates to land ownership. The Keraton’s (Sultan Palace) land is divided into the Sultan Ground and the Pakualam Ground. Both the Sultan and the Pakualam are estimated to retain 6,430.87 hectares or 2.1% of the total area of Yogyakarta (Munsyarif, 2013). The procedural arrangement of these properties is different from that which has been stipulated in the Law number 5/1960 concerning the basic regulation on agrarian principles in Indonesia. The arrangements of Keraton are under the authority of the Sultan and the

Pakualam instead of that of the National Land Authority. According to the Law number 13/2012 regarding the special status of Yogyakarta, Keraton has the authority to manage and utilize the land in order to attain the greatest development of culture, social interests and the welfare of the community. This land right has influenced the development of renewable energy as some renewable energy projects are located in the Sultan's land.

5.3 Policy Actors and Governance

This section describes key policy actors and the governance index of the Special Region of Yogyakarta. It discusses the roles of the executive, the legislature and civil society groups. Furthermore, the relationships between the Sultan and the legislature and civil society are also discussed. Additionally, it presents the governance index and describes current governance practice related to transparency and public participation.

5.3.1 Policy actors

This section presents key actors involved in policy process in Yogyakarta. This includes the executive, the legislature and civil society in Yogyakarta.

5.3.1.1 The Executive

As noted, Yogyakarta is led by Sultan Hamengkubuwono X as the governor and Adipati Pakualam as the deputy governor. Unlike other provinces, the governor and the deputy of Yogyakarta are not affiliated with any political parties and are not chosen through elections. Furthermore, the length of service of the governor is not bound by the provision of Law regarding Local Government which stipulates that the maximum length of service of governor is two terms or ten7 years. As long as Hamengkubuwono X is enthroned as Sultan of Yogyakarta, then he can also serve as the governor.

In running the local administration, the governor is supported by 28 local institutions. Some of the local agencies involved in the development of renewable energy are the Financial and Asset Management Agency, Sub-National Development Planning Agency, Bureau of Land and Spatial Planning and Bureau of Public Works, Housing and Energy Resources.

5.3.1.2 The Legislature

There are at least three functions of the local parliament: legislating, budgeting and monitoring. The function of legislating is related to the local regulation making process. In making local regulations, the governor needs to obtain the approval of the local parliament. While initiatives for local regulation can come from the governor or the parliament, the local parliament also plays a role in budgeting. The legislature discusses the proposed budget from the executive and will approve it if there is no objection from the legislature. Finally, the local parliament performs a "check and balance" function to monitor the implementation of policies and programs by the executive.

While ideally the local parliament should possess equal power to that of the executive in order to run an effective check and balance function, this is not the case in Yogyakarta. There are two reasons why legislators in Yogyakarta have a relatively weak position. First, as a province under a monarchy, the Sultan is a highly respected figure including in the political arena. Like many other people of Yogyakarta, most legislators have a strong cultural bond with their traditional leader. It is common practice to respect the Sultan and his attributes in official events such as plenary meetings and it occurs automatically among the legislators, including the chair of the local parliament (Santoso, 2015). Furthermore, the Sultan has a great capacity to mobilize the political preferences of the Yogyakarta people. Thus, opposing the Sultan might jeopardize legislative actors' opportunity to get re-elected. Even if the legislators decide to challenge the Sultan's decisions, the fact that the Sultan is not elected makes it virtually impossible to defy him. This is different to the governors in other provinces who need

support from political parties for their nomination and campaigning during election periods (Harsono, 2018).

As a result, the relationship between the executive and the parliament in Yogyakarta is far from balanced. The check and balance function which should be performed by legislators tends to be ineffective as they are reluctant to defy the will of the governor who is also the king of Yogyakarta.

Another reason is because the members of the legislature are divided among themselves as they are affiliated to multiple political parties. Currently, legislators of the special region of Yogyakarta are affiliated to ten different parties. This fragmentation has further weakened legislators' position to counter the executive's dominance (Harsono, 2018).

During 2014 – 2019, the local parliament of the special region of Yogyakarta consisted of 55 members. The members came from nine political parties, namely: PDI Perjuangan, Partai Keadilan Sejahtera (PKS), Golkar, Gerindra, Partai Kebangkitan Bangsa (PKB), Partai Amanat Nasional (PAN), Partai Persatuan Pembangunan (PPP), Partai Demokrat, and Partai Nasional Demokrat (Nasdem).

5.3.1.3 Civil Society

While the executive and legislature are formal administrative institutions, civil society can be perceived as being outside the state group or government organizations. Civil society includes Non-Governmental Organizations (NGOs), community groups, the press, universities and the citizens.

The growth of civil society organizations (CSOs) in Yogyakarta is quite remarkable. An increasing number of CSOs have emerged since 1998 when the Sultan backed the reformation movement to overthrow the authoritarian regime of Soeharto. In 2010, the number of CSOs was estimated to be around 100 (Kustiningsih, 2012). This number increased to approximately 800 organizations in 2017 (RRI, 2017). Good governance,

environment and gender are the major issues that concern the CSOs. In terms of renewable energy and sustainable development, several NGOs such as Yayasan Dian Desa, Walhi, Hivos and community groups comprising farmers, fishermen and the tourism sector have been involved in promoting renewable energy and environmental preservation.

In general, Sultan Hamengkubuwono X has a close relationship with civil society organizations. The close relationships began in 1998 during the reformation era when the Sultan joined the public movement and gave a speech in front of approximately one million Yogyakartans to support total and peaceful reformation of the authoritarian regime of Indonesia's second president, Soeharto. Hamengkubuwono X even invited the whole citizenry of Yogyakarta and Indonesia to strengthen the national leadership that truly fights for the interest of the people. Furthermore, many community groups have a cultural bond with the sultan and respect him as their king or the traditional leader. The close relationship is also supported by the role of the queen who is actively involved in the feminist movement and in community organizations (Harsono, 2018). This intimacy meant that the Sultan rarely faced open criticism and resistance to his policies in Yogyakarta until the conflicts over the *Keraton*'s land emerged.

Most people of Yogyakarta still hold to a local custom which is called *'ewuh pakewuh'* which means a sense of shyness, awkwardness and respect toward others because of their position, seniority and charisma. Such traditional hierarchical relationships create a feeling of shyness and reticence among subordinates in their dealings with superiors (Wati, 2014). This culture was experienced by the researcher during the fieldwork in Yogyakarta. In several interviews, people were reluctant to speak negatively about the Sultan or his families. People tended to lower their voice, as a form of respect, when talking about the Sultan.

However, this culture seems to be fading away. For example Yogyakarta citizens have recently challenged some of Keraton's decision regarding the use of Sultan's ground. Local people argued that the Sultan's policies regarding the utilization of his grounds did not favour

them. Instead, it favoured the private investors who will pay a greater amount of money to rent the land. In some places, local people were forced to move from the Sultan's land because private investors had gained the permits to utilize the land. One staff member from a local environmental NGO revealed:

"Today leadership is in favour to the big investors and they could not see the long-term impact of that development on the environment. There are some of sultan's ground that utilized by the investors for business purposes and sacrifice the interests of local people... The land should be used for the greatest benefit of the people…"

The most recent case is the construction of the new Yogyakarta international airport in the Kulon Progo district where the Keraton's land was included. The project encountered resistance from the local communities and some NGOs. Before construction of the new airport, a public consultation involving the Mayor of Kulon Progo, officials from the local government and local communities was held. In the forum, the Mayor stated that the construction of the new airport will depend on the decision of the local residents. However, in reality, the decision was made without considering the objections from the local people (Azizi et al., 2017). Walhi, one of the prominent environmental organizations in Indonesia, argues that the project will harm the environment and fail to benefit local people, rather it only serves the capitalists which includes the Royal Family. The construction of the new airport has forced local residents to leave their houses and their agricultural land which was their only source of income. This has resulted in protests and road blockades into the site of the project. However, with the guarantee from the Sultan, the developers are still continuing to build the infrastructure.

Furthermore, Yanuardy (2012) argues that the Sultan is not only the governor and traditional leader, he has a third role as a businessman. These intertwining roles as a governor, a Sultan and a businessman enable Hamengkubuwono X to utilize the land without significant disruption. The sultanate's lands have become an important asset to reinforce the Sultan's

family business in various sectors such as infrastructure (hotels, malls, hospitals), manufacturing and agriculture (textiles, silk, sugar, tobaccos), mining (iron and sand) and media (TV station). The Globe Asia (2018) notes that the Sultan is the 125th richest man in Indonesia with a total net asset worth of USD 250 million.

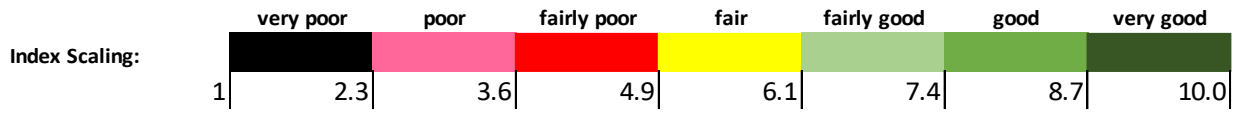
5.4 Governance index

Some institutions have conducted an evaluation to measure governance practice in Indonesia. These include the Regional Autonomy Watch (KPPOD), The Asia Foundation (2011) and most recently, The Partnerships for Governance Reform or Kemitraan (2013). The report from Kemitraan has been used by many agencies such as the Ministry of Home Affairs, the Commission of Corruption Eradication, the OECD and Ausaid. This report provided governance index scores for 33 provinces in Indonesia during 2012. Good governance indicators such as public participation, fairness, accountability, transparency, efficiency and effectiveness were applied to measure governance practice in four arenas: government, bureaucracy, civil society and economic society.

According to a report from Kemitraan (2013), despite its status as a monarchy, Yogyakarta has a satisfactory governance index score. Yogyakarta has the best score on the governance index of all provinces in Indonesia with 6.8, compared to a national average governance index score of 5.7 (Gismar et al., 2013). Although, the report was published in 2013, some findings are still relevant when describing contemporary governance practices in Yogyakarta and can provide useful guidance when investigating the practice of transparency and public participation in the renewable energy sector.

Table 5.1: Governance Index: National and Yogyakarta

Arena	Index per Arena		Participation		Fairness		Accountability		Transparency		Efficiency		Effectiveness	
	Yogyakarta	National	Yogyakarta	National	Yogyakarta	National	Yogyakarta	National	Yogyakarta	National	Yogyakarta	National	Yogyakarta	National
Government	6.5	5.3	6.4	5.9	2.9	3.9	8.4	5.5	8.0	4.6	6.7	7.5	5.9	5.5
Bureaucracy	7.5	5.7	9.6	4.0	7.4	5.9	7.7	6.2	9.1	5.0	5.4	7.0	5.9	5.4
Civil Society	6.7	6.3	7.6	6.5	6.4	6.3	6.4	6.2	6.4	6.3	6.4	6.2	7.0	6.5
Economic Society	6.1	5.7	6.4	6.2	6.4	5.8	6.4	6.2	6.4	5.8	6.4	5.5	4.6	4.7



Source: Gismar et al. (2013, p. 73)

Table 5.1 compares the governance index of Yogyakarta and the national average. Six governance indicators, namely, participation, fairness, accountability, transparency, efficiency and effectivity are evaluated within four areas: Government (Governor and legislature); Bureaucracy (policy implementer such as department, bureau, office and units that directly interact with the community); Civil Society (non-governmental and non-profit organizations); economic society (private sector, business entities and organizations with profit orientations). Overall, scores on governance indices for Yogyakarta are higher than the national average.

Participation in Bureaucracy has the highest score of 9.6. This score is much higher than the national average of 4.0. Participation in Bureaucracy was measured by the following indices: the existence of a public complaints center, the presence of a health board, education board and poverty eradication board, and the availability of a regular forum between the local government and the public (Gismar et al., 2013, p. 62).

On the other hand, participation scores are the lowest in the government and the economic society arenas with 6.4. However, these scores are still higher than the national average, 5.9 in the government arena and 6.2 in the economic society arenas respectively. We can

attribute the low score in the government arena of Yogyakarta to the poor quality of consultation between the governor and stakeholders, poor quality of public hearing in the local parliament during regulation-making and low public engagement in monitoring. In the economic society arena, poor quality of participation and lack of involvement in policy formulation are the factors that account for the low score.

Transparency in Bureaucracy has the second highest score with 9.1. in contrast to the national average score of 5.0. The high score for transparency in Yogyakarta can be attributed to the availability of financial documents regarding the local budget plan and investment regulations. On the other hand, the lowest scores for transparency occurred in the civil society and economic society arenas. Both scored 6.4, but still higher than the national average. In the case of civil society, the low score can be attributed to insufficiencies of and limitations in access to information regarding the activities of the organizations. While in the case of economic society, the low score was due to a lack of information about implemented projects, lack of coordination among business groups and limited utilization of sustainable resources.

The high scores for transparency and public participation are reflected in the findings of the research's fieldwork. For example, ARJI, the Aspiration of Yogyakarta's People Forum is held regularly every Friday at the courtyard of the Parliamentary Office. A range of issues are discussed every week and attended by diverse stakeholders including local government officials, local legislators, community groups, experts and academics and local citizens. However, from my observations, the discussion tends to be flat and to involve one-way communication. There was not much of a discussion or exchange of information between the speakers and the participants from civil society. The forum was more an educational venue or an opportunity for the government to engage in program socialization rather than a means of acquiring information about public concerns.

Figure 5.5: ARJI, a public aspiration forum in Yogyakarta.

As a form of transparency and public participation, the provincial government also developed a website called *"Jogjaplan"* which provides information regarding the government's programs and budget in several periods of time. However, there is no explanation about the detail of the programs such as the purpose, specific date and location of the programs. Furthermore, the website allows the public to convey their concerns through the website. Additionally, the government also developed a mobile application named "e-lapor" that enables the people of Yogyakarta to convey problems or complaints about occurrences within the province. A form of media to engage the community in public affairs is also available on the legislative website. Through a feature called "e-Aspirasi", the people of Yogyakarta can express their aspirations to the legislature.

To sum up, there is evidence of transparency and public participation in the governance process in Yogyakarta. Accessible information and the availability of public avenues for conveying public aspirations provide indicators of this. However, the situation might be different in the case of the renewable energy sector.

5.5 The State of Energy in Yogyakarta

To date, fossil fuel remains the primary energy source in Yogyakarta. Based on the documents from the Department of Public Works, Housing, Energy and Mineral Resources of Yogyakarta, in 2015, 96.9 percent energy in Yogyakarta was sourced from fossil fuels such as oil, coal, and natural gas. Energy demand in Yogyakarta is continuously increasing with economic growth and population growth as the main drivers. By 2018, the number of electricity customers was 1.2 million, an increase of 5.4 percent from 2017 (BPS Yogyakarta, 2019b). The increase also occurred in the amount of electricity sold. BPS Yogyakarta (2019b) asserted that the volume of sales in 2018 increased 4.87 percent from the previous year.

In a 'business as usual' scenario, the demand for energy is projected to increase by 7.63 percent annually with the increase being driven primarily by the transportation (60 percent) and household sectors (19.5 percent) (Lilies, Darsono, & Lukman, 2017). Besides economic and population growth, another factor that drives energy demand is energy inefficiency. The inefficiency is shown by high energy elasticity that reached 1.7 in 2016[4]. This means that in order to attain a 1 percent rate of economic growth, a 1.7 percent rate of growth in energy consumption was required. By increasing efficiency, the consumption of energy required to achieve the same level of economic growth will become lower.

To meet its energy demands, Yogyakarta must secure energy supplies from other regions. This is because Yogyakarta is one of the provinces that has no fossil energy sources such as oil, coal and gas. Fuel (gasoline, diesel, kerosene, oil and gas) are supplied by a Pertamina (a State owned oil company) depot in Rewulu which sources its supplies from Cilacap (Central Java). Additionally, electricity is supplied from interconnection electricity system of JAMALI (Jawa, Madura, and Bali) (Badruzzaman & Widiastuti, 2014).

[4] Interview with Bureau of Energy Yogyakarta in July 2018

The increased consumption of energy has negatively impacted on the environment and peoples' health. BPS Yogyakarta (2018a) reports that the air quality in Yogyakarta has declined due to increased industrial activity and numbers of motor vehicles. The volume of carbon emissions released has increased from 2.62 million tons CO2 in 2013 to 2.76 million tons in 2015[5]. Furthermore, air pollution has become a significant factor that causes illnesses such as respiratory disorder and asthma (Cahyono, 2016).

For these reasons, Yogyakarta's government is aware that the dependence on fossil-based energy must be reduced. Alternative energy sources must be developed. One of the alternatives is to develop renewable energy.

5.5.1 Renewable Energy in Yogyakarta

5.5.1.1 Current Status

Based on interviews conducted in July 2018 with officials from the Department of Energy Yogyakarta, the utilization rate of renewable energy was found to be around 5 percent. The provincial government claimed that energy diversification programs have been implemented through the implementation of several renewable energy projects including hydro, wind, solar and biogas projects

In 2015, Yogyakarta implemented renewable energy projects such as: (a) the construction of a solar power plant in Gunung Kidul with the capacity of 13,600 watts peak; (b) the installation of 200 solar panels for ten government office buildings; (c) the establishment of 250 biogas digesters; and (d) the improvement of micro hydro power plants, namely, 30,000 Watts power plants in Kulon Progo district and 8,000 Watts power plants in Sleman District.

Programs for developing renewable energy were also evident in 2016. In that year, a number of renewable energy projects were developed such as: the installation of biogas digesters

[5] Available at https://www.dprd-diy.go.id/pansus-ba-19-tahun-2019-lanjutkan-pembahasan-ra*Perda*-rancangan-umum-energi-daerah/

which consist of 120 units in Sleman, 230 units in Gunung Kidul, 120 units in Kulon Progo; the installation of total 200 solar panels in Gunung Kidul and Kulon Progo; and the maintenance of three micro hydro power plants.

Overall, programs to develop renewable energy are still limited to small-scale projects. However the Yogyakarta government has committed to increasing the capacity of such projects in order to improve the renewable energy mix in Yogyakarta.

In general, 15 renewable energy power plants had been established in Yogyakarta prior to 2017 (Table 5.2). All of these power plants can be categorized as small-scale power plants as their capacity is under 10 Mega Watt. The development of renewables started in 2005 with a range of energy sources such as wind, hydro, and solar.

Table 5.2: Renewable Energy Power Plants in Yogyakarta

No.	Description	Establishment year	Districts	Capacity (kW)	System
1	PLTH Pandansimo	2010	Bantul	90	Off Grid
2	PLTH Sanden	2013	Bantul	20	Off Grid
3	PLTMH Minggir 1	2005	Sleman	15	Off Grid
4	PLTMH Minggir 2	2007	Sleman	15	Off Grid
5	PLTMH Kedungrong	2011, 2012	Kulon Progo	2 x 15	Off Grid
6	PLTMH Blumbang	2013, 2014, 2015	Kulon Progo	2 x 20	Off Grid
7	PLTMH Semawung	2014	Kulon Progo	100	On Grid
8	PLTS Wediombo	2015	Gunungkidul	10	Off Grid
9	PLTS Banyunongko	2008	Gunungkidul	5	Off Grid
10	PLTS Pantai Gesing	2014	Gunungkidul	15	Off Grid
11	PLTS Serut	2012	Gunungkidul	15	Off Grid
12	PLTS Tersebar (50 Unit @100 Wp)	2017	Kulon Progo	5	Off Grid
13	PLTS Tersebar (265 Unit @200 Wp)	2016	Kulon Progo Bantul Gunungkidul	53	Off Grid
14	PLTS Perkotaan (10 Unit @1000 Wp)	2015	Yogyakarta	10	Off Grid
15	PLTS Perkotaan (5 Unit @13x50 Wp)	2014	Yogyakarta	3.25	Off Grid

Note:
PLTH = Hybrid Power Plant (Splar and Wind)
PLTMH = Micro Hydro power Plant
PLTS = Solar Power Plant

Source: Department of Public Works, Housing, Energy and Mineral Resources of Yogyakarta

In term of the network connection, these power plants can be divided into two groups: on-grid and off-grid power plants. On-grid power plant means that the power plant is integrated with the PLN (State Electricity Company) network. Integration with the network arises due to a business agreement in which the PLN agreed to purchase electricity produced by the IPP (Independent Power Producer) or private energy companies. However, the agreement must be preceded by fulfilling the provisions of government regulations such as permits or obtaining approval from the central and/or local governments. In Yogyakarta, the only on-grid power plant is PLTMH Semawung which is owned and operated by PT Energy Puritama, a private energy company.

Moreover, the off-grid power plant is an independent network and is not integrated with the PLN power network. Most of the renewable energy power plants in Yogyakarta are off-grid. These power plants are usually established by the government as a way to provide electricity to areas that do not have electricity access. However, there is a shortcoming. The nature of renewable energy is intermittent which means that is not continuously available. Such energy is unstable and unpredictable as it depends on natural conditions or the weather.

5.5.1.2 Potential Resources

Yogyakarta has multiple sources of renewable energy. As can be seen from the Table 5.3, a range of potential resources of renewable energy is available such as solar, micro hydro, wind, waste and bio-energy with a total capacity up to 75,531 TOE (Tonne of Oil Equivalent). In general, the utilization of renewable energy sources in Yogyakarta until 2016 is 4,415 TOE or 5.8 percent of the total potential capacity.

Table 5.3: Renewable Energy Resources in Yogyakarta

Renewable Energy	Potential Resources		As of 2016	
	Capacity	TOE (Tonne of oil equivalent)	Capacity	TOE (Tonne of oil equivalent)
Solar	10 MWp	301	200 kWp	4
Micro Hydro	2 MW	817	882 kW	358
Wind	100 MW	47,405	131 kW	62.1
Biogass - Bagasse	3.6 MVA/2.5 MW	929	3.6 MVA / 2.5MW	873
Waste	30 MW	4,520	5 kW	2
Bioethanol	36 million Liter	18,060	5 million	2,508
Biogass-livestock	15,000 Unit	2,768	2,000 Unit	369
Biogass-sanitation	500 Unit	92	100 Unit	18.2
Biogass-Tofu Waste	500 Unit	91	10 Unit	2
Biomassa Pellet	1,500 Tonne	548	600 Tonne	219
Total		**75,531**		**4,415**

Source: Department of Public Works, Housing, Energy and Mineral Resources of Yogyakarta, 2018

Wind is the biggest potential energy source since it can generate up to 100 Mega Watt (MW). This is due to the geographical location of Yogyakarta in the coastal area of southern Java, facing the Indian Ocean. This location gives it the potential to develop wind energy sources at places such as Sundak, Srandakan, Baron and Samas, where the speed of wind can reach up to 5 meters per second (Carepi, 2009). However, the utilization of wind as a source of energy is almost non-existent as the utilization rate is less than 1 percent of its potential.

In terms of hydro energy, several locations have been identified in the Sleman and Kulon Progo districts. The potential locations are the Kalibawang river, Kamal Channel, Van Der Wijk channel, Mataram irrigation systems, Buntung river, Bendung Tegal, Sumber Cincin Guking, Slumpret Waterfall and Sermo Dam. The development of hydropower in Yogyakarta started in 2005 when PLTMH Minggir 1 was established. To date there are 5 hydro power plants in Yogyakarta namely PLTMH Minggir 1, PLTMH Minggir 2, PLTMH Kedungrong, PLTMH Blumbang and PLTMH Semawung (Carepi, 2009). The main challenge in developing hydro energy is the fluctuation of water debit along the years.

The utilization of river flows and the irrigation system as energy sources has reached around 358 TOE or 43 percent of its potential (see Table 5.3). This is the highest percentage level of potential utilization among the various renewable energy sources. Based on its energy roadmap, the government of Yogyakarta plans to increase the number of hydro power plants and capacities. Furthermore, the components of hydro power plants can now be made domestically which will reduce the cost of energy production.

Furthermore, being located near the equator, Yogyakarta has the potential to generate energy from solar. Based on observations by Indonesia's Agency for the Assessment and Application of Technology or BPPT, the intensity of the sun's radiation reached 4.5 kWh/m2 with the maximum radiation occurring at 10.00-14.30 hours in all regions which is a great source of energy (Sugiyono, 2010). However, the development of solar energy in Yogyakarta is still minimal. In 2016, the utilization of solar energy reached 200 kilo watt peak (kWP) or only 2 percent of its potential. Sugiyono (2010) argues that one of the main obstacles to developing solar energy is that the investment requires large amounts of capital. This is mainly due to the expensive components that are used in establishing solar energy particularly batteries. The utilization of solar energy in Yogyakarta is mostly confined to remote areas that have no access to electricity as they are yet to be covered by the PLN power network. The reason for this state of affairs is because building and connecting the PLN's power network to these areas is not economically feasible due to their inaccessibility and the fact that they are sparsely inhabited. Building new power networks to these areas will be too expensive while the volume of sales will be small. Thus, solar energy emerges as an alternative to provide electricity to these areas.

Yogyakarta also has the potential to obtain renewable energy from biomass. Biomass is an organic fuel can be generated from the waste of animals or plant materials such as rice, coconut, corn and sugar cane. It can produce various energy products including electricity,

liquid fuel, gas and chemical materials. Another renewable energy source is waste from households and industry. There are community initiatives in progress that seek to transform waste into energy. An official from the Finance Bureau of Yogyakarta revealed in an interview that waste management in Yogyakarta has been the best in the nation. It was pioneered and managed by local communities. Wastes are managed and processed to become an energy source, fertilizer and handcrafts (interview with author 2018). Piyungan and Kaliurang are examples of locations that have the potential to source energy from waste.

5.5.1.3 Renewable Energy Policies

The energy policy framework in Yogyakarta was formulated based on three objectives: 1. growing demand for energy along with increasing economic activities and infrastructure development; 2. enhancing energy conservation and diversification, specifically for renewable energy sources and 3. building energy security, energy justice and environmental sustainability as well as supporting the National Energy Policy. In relation to the latter, the formulation of energy policy at the provincial level requires that reference be made to the national energy policy despite the fact that energy is one of the decentralized affairs. The most recent national energy policy in Indonesia was introduced through the enactment of The Presidential Regulation number 22 of 2017 regarding National Energy Plan or *Rencana Umum Energi Nasional* (RUEN). This regulation states that RUEN provides a reference point for the provincial government when formulating the Regional Development Plan and Provincial Energy Plan or *Rencana Umum Energi Daerah* (RUED). To date, RUED in Yogyakarta is still in the discussion process with the parliament.

Based on the document from the Department of Energy Yogyakarta, programs for developing renewable energy development are focused on aspects such as infrastructure and the facilitation of business permits. In regards to infrastructure, the Yogyakarta government planned to build infrastructure to support initiatives from local communities to develop

renewable energy. For example, the provision of facilities to process energy waste, such as sugarcane waste from sugar industry, so that it could become an energy source. In addition, the Yogyakarta government facilitates the issuance of permits for doing business and land acquisition by establishing a one-stop licensing service (*Pelayanan Terpadu Satu Pintu*). This facilitation has been provided for projects such as: the development of renewable energy district - Baron Technological Park, 50 MW Wind Power in Bantul, Semawung Micro Hydro Power Plant and biogas projects in rural areas.

Yogyakarta has also designed a roadmap comprising short term, medium term and long-term plans as can be seen in Table 5.4. The table depicts various policies which seek to improve renewable energy with reference to four types of renewable energy sources: hydro, solar, wind and biomass.

Table 5.4: Renewable Energy Development Roadmap

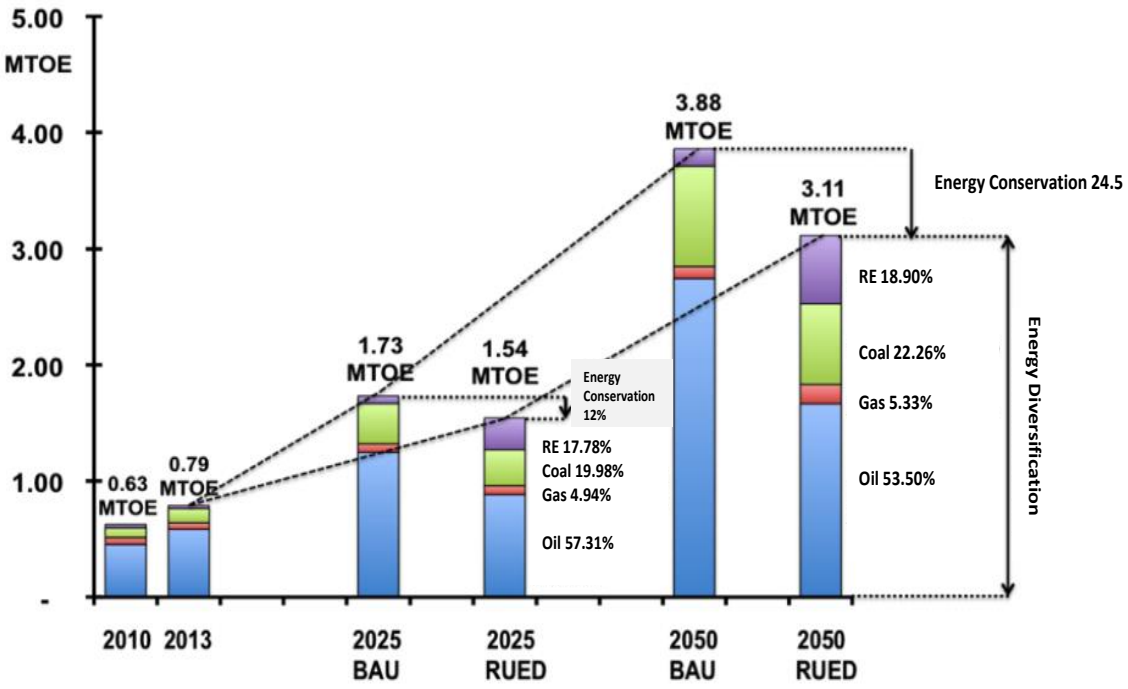
Renewable Energy	Short Term 2011-2015	Medium Term 2016-2020	Long Term 2021-2025
Hydro	Continuously increase the number Hydro Power Plant	Investing in manufacturing Micro Hydro Power Plant to supply local needs and collaborating with universities.	Making innovation of electricity business model based on Micro Hydro Power both off-grid and on-grid connection.
Solar	• Installing solar panel in remote areas • Solar panel for street lights • Socialization through media and intensive education to societies	• Installing solar panels in government and other public buildings • Installing solar panels to the households powered above 6,600 VA • Improving cooperation with various parties to	• Improving the number of solar panel installations • Monitoring the development.

		disseminate information for public	
Wind	Developing micro-scale Wind Power Plant (500 – 2500 VA) in fishermen communities.	Establishing small and medium enterprises in windfarm locations by collaborating with NGOs.	Creating tourist destinations in the windfarm areas to support development of surrounding areas.
Biomass	To encourage and direct the use of biomass fuel in households and industries	Promoting biomass utilization as more economical and environmentally friendly.	Improving technology and production capacity of biomass fuel

Source: Department of Public Works, Housing, Energy and Mineral Resources Yogyakarta, 2018

Target regarding renewable energy have also been set by the provincial government of Yogyakarta. Figure 5.6 shows the roadmap of energy mix in Yogyakarta based on Yogyakarta's energy policy in 2014. Renewable energy's share of the total energy account is expected to increase from around 2 percent in 2013 to 17.8 percent in 2025. The government of Yogyakarta has also promoted energy conservation which is expected to reduce energy consumption. This can be done by raising people's awareness about energy efficiency and promoting energy saving devices. To achieve the nominated targets, the Yogyakarta government also aims to engage with wider stakeholders, such as universities, NGOs and the private sector in order to support the development of renewable energy. The universities are expected to provide support in socializing knowledge, conducting research and development regarding technology, engaging in innovation and promoting business models in renewable energy. NGOs will support the local community in encouraging small and medium businesses to develop renewable energy power plants and particularly wind farms, which often become tourist destinations.

Figure 5.6: Yogyakarta Energy Mix Plan 2014



Source: (Department of Energy Yogyakarta Province, 2018)

However, the commitment to develop renewable energy is not reflected in the amount of the budget allocated at the provincial level. As Table 5.5 shows, the budget for developing renewable energy significantly decreased from 2016 to 2018. In 2018, the allocated budget to develop renewable energy was Rp3.8 billion or only 0.07 percent of the total expenditure of the province that reached Rp5,296.4 billion.

Table 5.5: Budget for Renewable Energy in Yogyakarta

(in million Rupiah)

EBT	2014	2015	2016	2017	2018
Biogas	-	508	7,693	5,951	3,181
PLTS	343	107	4,278	293	-
PLTMH	738	-	256	-	-
Operasional dan Pemeliharaan EBT	119	1,374	912	210	627
JUMLAH	**1,200**	**1,990**	**13,139**	**6,454**	**3,808**

Source: Department of Public Works, Housing, Energy and Mineral Resources Yogyakarta

The disparity between the renewable energy target and the budget allocation raises the question of whether the provincial government is seriously committed to transitioning from fossil fuel to renewable energy. This will be discussed in the next chapter.

In December 2018, Yogyakarta issued Provincial Regulation of *Peraturan Daerah (Perda)* regarding Renewable Energy. However, the *Perda* does not specify targets for renewable energy. The renewable energy target will be likely to set in other energy policy document called the Provincial Energy Policy or *Rencana Umum Energi Daerah (RUED)* that is, per December 2019, still on the formulation process.

5.5.2 The Surplus of Electricity

Indonesia has an excess of electricity supply produced by PLN since 2017. Before that, Indonesia struggled to meet its electricity demand as blackouts frequently occurred in regions such as Sumatera, Sulawesi, Kalimantan and eastern parts of the country. In response to these blackouts, in 2014 the Indonesia government introduced the “35,000 Megawatt” electricity program which was mostly sourced from coal. This ambitious program led to an increase in PLN’s production from 176.472,21 Giga Watt hour (GWh) in 2015 to 188.698,46 GWh in 2018. PLN also purchased electricity from the private sector to the volume of

78,386.92 GWh in 2018. This purchase has increased the total electricity supply which in 2018 reached 267,085.38 GWh (MEMR, 2019c).

On the other hand, the total electricity sales were 234,617.88 GWh. These sales were made mostly to the household sector (97,832.28 GWh) while sales to the industrial, commercial and public sectors were 76,946.50 GWh, 44,027.40 GWh and 15,811.70 GWh respectively.

The gap between electricity supply and sales has resulted in an electricity surplus of 32,467.50 GWh (MEMR, 2019c). The over supply of electricity was not only caused from the supply side. On the demand side, stagnant economic growth has affected electricity consumption. The electricity was generated based on the assumption that electricity demand would grow at 7.2 percent over the next ten years. However, the real demand in the last one to two years was not in accordance with PLN's estimation (Katadata, 2017).

This condition has affected electricity status in Yogyakarta. Due to excess supply, PLN has aggressively covered areas which did not have electricity access. As a result, the electrification ratio in Yogyakarta has improved significantly from 86.27 percent in 2015 to 99.99 percent in 2018 (MEMR, 2016, 2019c). This means that almost every household in Yogyakarta currently has access to electricity. From the total of 1.155.629 households in Yogyakarta, approximately 94 percent are connected with the PLN power network, while six percent of them are sourced from independent or off-grid power plants (MEMR, 2019c).

The high electrification ratio in Yogyakarta has also affected the development of renewable energy. The provincial government of Yogyakarta had previously intended to utilize renewable energy in order to provide energy to those areas which did not have electricity access. However, now almost all areas or villages in Yogyakarta have electricity access. This has made the future of renewable energy uncertain. Furthermore, the support from central government for developing renewable energy has also been limited.

5.6 Conclusion

This chapter provided an overview of the historical context and profile of Yogyakarta, its policy actors and governance index and its energy sector. It also examined recent policies and programs for renewable energy development. The discussions found in this chapter provide a context for the analysis of renewable energy governance practice, a topic which will be further explored in Chapter 7.

CHAPTER 6

RENEWABLE ENERGY GOVERNANCE IN YOGYAKARTA

6.1 Introduction

This chapter presents data and information collected during the field work with respect to the governance practice of renewable energy at provincial level in Yogyakarta. The term governance in this context refers to the policy making process and the role of key actors involved in the development of renewable energy projects. With regard to the policy making process, two ongoing Local Regulations *(Perda)* related to the development of renewable energy will be analysed. While with regard to projects development, two renewable energy projects are examined.

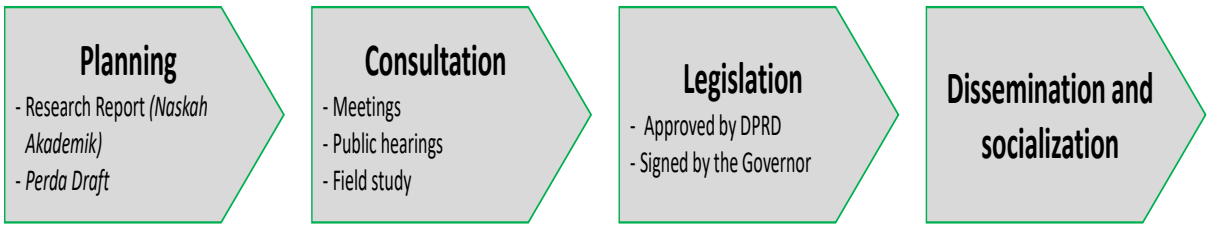
The examination will revolve around two governance indicators namely transparency and public participation. This is because transparency and public participation are considered to be key determinants of the level of success in the transition towards sustainable energy options (Eden, 2016; Gupta, 2014; Steg et al., 2015). Furthermore, interrelationships among the actors who take part in these processes will be explored. Data will be drawn from documentary research, field observation and interviews with central and local government officials, individuals from private sector, civil society organisations and local citizens.

The remainder of this chapter consists of five sections: Section 6.2 presents the formulation process of *Perda* in relation to renewable energy development, namely *Perda* RUED and *Perda* Renewable Energy. Section 6.3 outlines two renewable energy projects namely PLTH Pantai Baru and PLTMH Semawung. PLTH Pantai Baru is a hybrid power plant which is sourced from wind and solar energy and is currently owned by the provincial government of Yogyakarta. PLMTH Semawung is a micro-hydro power plant which is owned and operated by a private energy company. Finally, section 6.4 is the conclusion.

6.2 Policy Making Process in Energy Sector

This section outlines the formulation process of two Local Regulations or *Peraturan Daerah* (*Perda*) in Yogyakarta's renewable energy sector. Field observation and interviews were conducted during June to July 2018. However, it is worth mentioning that the formulation of *Perda* RUED is still in progress, while the formulation of *Perda* Renewable Energy was finished and enacted in December 2018.

Figure 6.1: Perda Making Stages



Source: Adapted from Law 12 of 2011 on the Establishment of Laws and Regulations

The *Perda* formulation process is illustrated in Figure 6.1. There are four stages in the formulation process. The first process is the planning stage which includes the formulation of the Research Report (*Naskah Akademis*) and a draft of the *Perda*. The Research Report document was formulated by independent third parties who have expertise in energy issues. The document provides scientific analysis, information and inputs that support policy makers in making sound Local Regulation (*Perda*). The inputs obtained from the Research Report are then integrated into the draft *Perda* to be discussed with stakeholders at the consultation stage.

The next stage is the consultation process. At the initial phase, consultation is only between the executive (Provincial government) and the legislature. This process mainly involves discussion of the significance of the planned *Perda* and an attempt to obtain consensus among both institutions about whether the formulation process should proceed further. If the governors and a sufficient number of the legislators are in agreement, the consultation process may involve wider stakeholders such as academics, experts, business and industry

sectors, NGOs and local communities. Furthermore, the provincial government and legislators can consult with the central government and other local governments. The consultation process can be done through forums such as consultation meetings, public hearings or field visits.

After the executive and the legislature reach an agreement, *Perda* draft can be signed by the governor and officially enacted as a *Perda*. Lastly, the information regarding new *Perda* is disseminated to the public.

6.2.1 Local Regulation (*Perda*) of Provincial Energy Policy or RUED

RUED (*Rencana Umum Energi Daerah*) is the Provincial Energy Policy which provides a legal basis for developing energy-related policies and programs. There are five aspects that need to be covered within RUED, namely: supply and demand of energy at provincial level; identification of energy-related problems; potential energy sources including renewable energy; policies and programs to sustainably meet local energy demand; and financing sources. Until December 2019, *Perda* RUED of Yogyakarta was still at the consultation process and has not been officially launched.

RUED is established through the enactment of Local Regulation or *Perda* and *Perda* needs be enacted at least one year after the enactment of RUEN. However, until November 2019, only five of 34 provinces in Indonesia had RUED. This is partly because of a lack of knowledge about renewable energy issues. Provinces that have enacted RUED are West Java, Central Java, East Java, West Nusa Tenggara and North Kalimantan.

The formulation of Provincial Energy Policy (RUED) is based on and should refer to the provision of the National Energy Policy (RUEN). This means that the contents or materials of RUED should be in line with the principles and objectives of RUEN. Hence, the formulation of RUED also requires that central government bodies should supervise the RUED

formulation process. The National Energy Council (NEC) and the Ministry of Energy and Mineral Resources (MEMR) are the two central government institutions that are involved. NEC and MEMR are responsible for supervising and monitoring the RUED formulation process to ensure that RUED is in line with the National Energy Policy (RUEN).

Actors involved in the *Perda* formulation process can be divided into three groups: the executive, legislature and civil society organizations. The executive is led by the Governor and supported by two institutions namely, the Regional Planning Agency (Bappeda) and the Department of Public Works, Housing, Energy and Mineral Resources (Dinas Energi). Both institutions have the responsibility to guide the process from preparation until the finalization of RUED and they act as the coordinators of other executive units. However, in the consultation process, other related departments such as the Department of Finance, the Department of Law, the Department of Transportation, Environmental Agency and the Department of Agriculture were also involved.

DPRD Yogyakarta or the legislature has the responsibility to discuss and to approve or disapprove *Perda* draft proposed by the Executive. Furthermore, the legislature is also responsible for monitoring the implementation of *Perda*. This is in accordance with the two functions of DPRD, namely, the legislative function and the supervisory function.

Civil society was also involved in the formulation of *Perda* RUED through a public hearing to discuss the draft of RUED held on 12 August 2019. The public hearing was designed to obtain inputs and perspectives from a wider group of stakeholders regarding the draft of RUED. It also served as a mechanism to implement good governance by improving transparency and public participation in the decision making process. In regard to *Perda* RUED, experts, universities, the private sector and community groups were planned to be invited to the next public hearings.

Draft Submission and consultation meetings

On 4 July 2019, the provincial government submitted the draft of RUED to DPRD the Special Region of Yogyakarta. The draft was officially submitted to Head of DRPD DI Yogyakarta by the vice governor, Pakualam X. The submission was then followed by internal meetings among DPRD members. The DPRD then decided to approve the draft and to continue the process of *Perda* RUED.

On 12 July 2019, DPRD Yogyakarta formed a special committee or *Pansus* (*Panitia Khusus*) to further discuss the draft of *Perda* RUED received from the executive. Thirteen legislators from seven political parties were appointed as members of *Pansus* which was chaired by Suharwanta from Partai Amanat Nasional/National Mandate Party. Several activities were undertaken by *Pansus* members in the performance of their duties such as consultation meetings with multiple stakeholders, visits to other provinces such as West Nusa Tenggara to compare and learn about the formulation of RUED and visits to the National Energy Board to obtain inputs and perspectives from the central government.

The drafting of the agenda was followed by a consultation meeting between the executive and *Pansus* members. In these consultation meetings, all responses and questions from *Pansus* members were recorded and handed over to the Executive. Official answers from the Executive would then be submitted back to the DPRD DI Yogyakarta.

A range of issues were discussed during the consultation meetings. The practice of transparency is visible within the process of determining renewable energy targets. During the meetings, both the executive and the legislature were open to receiving information and data that was used to set renewable energy targets within the RUED. Furthermore, responses and questions from the legislators were recorded and made available to the public through the official website of the legislature.

One of the concerns raised by the legislators was about the proposed renewable energy targets in the Yogyakarta RUED. In a draft of the RUED, renewable energy targets in

Yogyakarta were stipulated to achieve 9 percent and 13 percent of Yogyakarta's total energy account in 2025 and 2050 respectively. These renewable energy targets are lower than the targets set in Yogyakarta RUED 2014 (17.8 percent in 2025 and 18.9 percent in 2050) and the national target set in RUEN 2017 (23 percent in 2025 and 31 percent in 2050).

This concern was raised by Partai Keadilan Sejahtera/Prosperous Justice Party. From official documents of DPRD, regarding the low renewable energy target on RUED draft, a spokesperson of the Party questioned:

> *"Why is there a huge gap between renewable energy target in RUED draft and national target? What are the considerations?, and has this difference been communicated and coordinated with the central government?"* (DPRD DIY, 2018).

Furthermore, the legislature and the executive decided to continue the discussion by involving a wider number of stakeholders. However, until 2019, only one public hearing was conducted which was held on 8 August 2019. Multiple stakeholders participated in the meeting such as academics, the State Electricity Company (PLN), State Oil Company (Pertamina), Yogyakarta Association of Oil and Gas Entrepreneurs and NGOs. The purpose of the public hearing was to obtain information and perspectives from multiple stakeholders. At the end of the meeting, the chairman concluded that *Pansus* will consider the concerns of all stakeholders before the RUED is enacted. However, details about the hearing are not available on official websites of the provincial government, the legislature or the local newspaper.

With regard to the low target for renewable energy set in the draft RUED, an official from the Department of Energy Yogyakarta argued that it is difficult for Yogyakarta to follow RUEN objectives regarding renewable energy. He stated:

> *"In 2025, the highest renewable energy share we can achieve is around 10 percent. That is the best-case scenario."* (Interview with author 2018)

Another official added:

> *"Our resources are not sufficient to reinforce national target on renewable energy. We need to consider our real potency. We can just write down and the target as high, but then how to achieve it? What are the strategies? If it is not possible to achieve, it is useless to set such high targets."* (Interview with author 2018)

Coordination with the central government is imperative in the formulation of local regulations. According to the Law 23 of 2014 regarding Local Government, the central government via the Ministry of Home Affairs has the authority to review local regulations since it can revise or cancel local regulations that have been signed by the governor.

Some officials argued that coordination between the central and provincial governments during the formulation of RUEN was poor. There was insufficient consultation between the two levels of government. An official from Regional Planning Agency (Bappeda) Yogyakarta claimed that there was involvement from the provincial government, but it was a very minimal. He maintained:

> *"Before the national targets of renewable energy were officially stipulated, the central government once asked us to send the potential and capacity of renewable energy in our province…. But, I believe the stipulated targets on RUEN are more a political decision. (Interview with author 2018)*

In addition, one of the officials from Department of Energy Yogyakarta conveyed:

> *"The formulation of RUEN was without our involvement. The renewable energy targets on RUEN were set by the central government… And we, the local governments are required to follow the targets… Central Government should talk to us first about the renewable energy targets because we know better about the condition and the character of our region… (Interview with author 2018)"*

To date, the local government of Yogyakarta and the central government are still discussing renewable energy targets in the RUED Yogyakarta. The central government still suggests that the provincial target of renewable energy needs to be around 23% in 2025 and 31% in

2050, while the government of Yogyakarta perceives that the suggestion from the central government is just wishful thinking.

An official from Department of Energy Yogyakarta revealed:

> *"At the moment, we still negotiate the targets of renewable energy with the NEC. We will continue to negotiate until they understand our actual condition here… Central government needs to know that we cannot be pushed to achieve 23 percent in 2025, because our resources are not sufficient…"* (Interview with author 2018)

In summary, based on evidence gathered from the fieldwork, the formulation of *Perda* RUED has provided evidence of active communication between the executive and the legislature. The formulation process has also involved multiple stakeholders from the private sector, universities and NGOs. However, there is no evidence that local communities are involved. In addition, a lack of coordination between central and provincial government has been revealed during the interviews and this has delayed the formulation of *Perda* RUED in Yogyakarta.

6.2.2 Local Regulation (*Perda*) of Renewable Energy

Another *Perda* related with renewable energy development in Yogyakarta is *Perda* renewable energy (*Perda* RE). Unlike *Perda* RUED which is formulated because of a provision of the National Energy Policy (REUN), *Perda* RE is an initiative from the legislature of Yogyakarta.

The formulation of *Perda* RE was triggered by the enactment of Law 23/2014 regarding Local Government. The Law re-arranged authority in three government levels, central, provincial and district, which includes the authority arrangement in the energy sector. Based on Law 23/2014, the authority of renewable energy is divided as follows:

a. Central Government has authority over:

- Issuance of permits on drilling, excavation, utilization, and exploitation of water resources across provinces.

- The arrangement and procurement of project location of geothermal sector.
- Issuance of permits on direct utilization of geothermal across districts and provinces and on indirect utilization.
- Electricity pricing.
- The establishment of business entities for the utilization of water to generate electricity.
- Issuance of letter statements of business registration where business activities are conducted across provinces.
- Issuance of business permits for biofuel with the capacity > 10,000 tons per year.
- Issuance of business license on electricity sector which involves multiple provinces, and state-owned enterprises.

b. Provincial government has authority over:

- Issuance of permits on drilling, excavation, utilization and exploitation of water resources within a province.
- Issuance of permits on direct utilization of geothermal across districts within a province.
- Issuance of letter statement of business registration which conducts activities within a province.
- Issuance of business permit of biofuel with the capacity ≤ 10,000 tons per year.

c. District government has authority over:

- Issuance of permits on direct utilization of geothermal within a district.

Based on the provisions of Law 23/2014 above, the central government holds the highest authority over the energy sector since it manages strategic matters such as electricity pricing, inter-provincial and international arrangements and high scale energy projects. While

provincial governments have authority over location of energy projects or land permit and small or medium scale energy capacity. Furthermore, the district government's authority in the energy sector is limited to the direct utilization of energy resources.

Furthermore, the distribution of energy authority on Law 23 of 2014 is limited to the geothermal, water and biofuel sectors. While other renewable energy sources such as solar, wind, waste and biogas have not been regulated. Therefore, *Perda* RE was aimed to serve as a guideline in developing and managing renewable energy in Yogyakarta.

The provincial government of Yogyakarta considered that a more detailed regulation is required in order to further develop renewable energy in the province. For example, provisions that could attract private sector to invest in renewable energy in Yogyakarta. Thus, provisions regarding business procedure, partnerships arrangement and incentives need to be elaborated in *Perda* or local regulation in order to provide clarity and certainty for the private sector.

Perda Submission and consultation meetings

The initiative of the *Perda* RE came from the Commission C of DPRD DI Yogyakarta. Commission C is one of four commissions in DPRD DI Yogyakarta responsible for regional development-related matters. During 2014 – 2019, Commission C comprised 16 members from multiple political parties. The process of formulating *Perda* RE began in 2017 before the formulation of *Perda* RUED was started.

On 12 February 2018, *Perda* RE was officially proposed by the Commission C through an Internal Plenary Meeting of DPRD Yogyakarta. Internal meeting means that the meeting was a consultation forum among the legislators. The meeting was chaired by the Head of DPRD and attended by 47 of 55 members. The spokesperson of the Commission, Agus Subagyo from Golkar Party, presented the rationale and significance of the initiative.

The process was then followed by questions and comments from political parties which were conveyed through spokespersons from all political parties. Questions and comments from political parties were addressed by Commission C in the other internal plenary meeting which was held on the next day. The internal consultation process went smoothly without any resistance and negative feedback from the other legislators. In general, all legislators endorsed the enactment of *Perda* RE. The main reason was the lack of fossil energy sources in Yogyakarta. On the other hand, Yogyakarta has renewable energy sources and capable human resources that can be utilized as energy sources. The meeting concluded with the approval of the proposal of *Perda* Renewable Energy. The approval decision was officially stipulated by the Decree of DPRD DI Yogyakarta number 14/K/DPRD/2018.

On 2 March 2018, a special committee or *Pansus* was established in order to further discuss *Perda* RE. Seventeen legislators from seven different parties were appointed as its members. Sukamto from Partai Kebangkitan Bangsa/National Awakening Party was selected as the chairman of *Pansus* and Chang Wendryanto from Partai Demokrasi Indonesia Perjuangan/ Indonesian Democratic Struggle Party) as the vice chairman. The special committee has main responsibility to coordinate the formulation process of *Perda* Renewable Energy. *Pansus* also visited other provinces such as East Kalimantan and Bali to obtain information and references regarding the material of *Perda* RE.

In March 2018, several public meetings were held. A range of participants were involved in these meetings such as officials from the provincial government (Department of Public Works, Housing, Energy and Mineral Resources, Regional Planning Agency, Provincial Government Secretariat, Department of Finance), universities and NGOs.

The meeting with the executive was held in March 2018. Before the meeting was conducted, DPRD DIY handed over the Research Report and draft of *Perda* RE to the executive. During the meeting, the legislators suggested that the local government focus on making Yogyakarta

the center for the development of renewable energy in Indonesia. Furthermore, it was anticipated that the local government can support the national target of achieving renewable energy of 23 percent in 2025.

In line with the desires of the legislators, the government of Yogyakarta welcomed the initiative to formulate *Perda* RE. The local government agreed that *Perda* Renewable Energy is important for DI Yogyakarta. The presence of this *Perda* will provide a legal basis for renewable energy development.

The participation of civil society actors was evident within the *Perda* formulation process. NGOs and experts from universities were invited to provide inputs and to voice their concerns regarding the policy to develop renewable energy in Yogyakarta. The inputs from universities are imperative for the provincial government as they do not have in-house experts on the renewable energy sector, particularly regarding technical issues. Experts from Gadjah Mada University and Atmajaya Yogyakarta University were invited to the consultation meeting. The expert from Gadjah Mada University highlighted the potential of renewable energy resources and presented technical information about the development of renewable energy. While the expert from Atmajaya Yogyakarta University shared his perspective regarding the legal arrangement of *Perda* RE. An academic from Gadjah Mada University claimed:

> *"We were actively involved in the formulation of Perda RE. We even provided studies that offers perspectives from economic, law, technology, and macro-economic."* (Interview with author 2018)

By having *Perda* RE, Yogyakarta was one step ahead of the central government in terms of the commitment to develop renewable energy. Moreover, renewable energy policy in Yogyakarta is also fully supported by the Sultan. As one of the Gadjah Mada University academics stated:

"Sultan Hamengkubuwono X is very supportive in enhancing the role of renewable energy and he is understanding about renewable energy. From several hearings with us, we can tell that he is on the side of renewable energy development." (Interview with author 2018)

Furthermore, the transformation toward renewable energy has also been supported by civil society actors such as universities, NGOs and local communities. He continued:

"Universities and local communities fully support this policy. Many NGOs in Yogyakarta actively promote the utilization of renewable energy... Additionally, local communities such as energy conservation community group, bike-to work community group, and green building community group have already been aware about renewable energy." (Interview with author 2018)

The commitment to transform into renewable energy from central government was instead questioned by the academic. He argued:

"The commitment from provincial government is strong. However, we need to look at the policy at the national level. Last year, the central government issued a regulation that mathematically put renewable energy below fossil energy... It becomes a disincentive for renewable energy development. The regulation has indicated that central government's commitment is very low... So, the problem of low renewable energy share in Yogyakarta cannot be separated from the political constellation in Indonesia as a whole." (Interview with author 2018)

Walhi, one of the notable environmental NGOs in Indonesia, was involved in the formulation process. A recommendation regarding the effective way to develop renewable energy in Yogyakarta was also made. When being asked about their involvement in the formulation of *Perda* RE, one activist stated:

"We were involved several times in the Perda formulation process... The government of DI Yogyakarta need to stop the massive development which increases energy consumption... For now, the most effective way to develop renewable energy is by developing small capacity but applicable in many villages... For example, the installation of solar panels in private houses." (Interview with author 2018)

Overall, consultation meetings and public hearings were transparent and supported by participation from the public. The data and documents used as the basis for formulating both *Perda* were accessible. Suggestions from universities and NGOs were also taken into account when formulating *Perda* RE. Additionally, any concerns and suggestions can be conveyed through the official websites of the provincial government or DPRD DIY.

However, the level of public participation was limited since the formulation process of *Perda* RE did not involve the private sector and community groups. This is unfortunate as the interests and concerns of the private sector need to be addressed within the *Perda* RE in order to expedite capital inflow for renewable energy development. The engagement of the private sector will also give certainty to and build trust in the provincial government of Yogyakarta. Participation from citizens or community groups was also absent during the formulation process. One NGO argued that renewable energy and sustainable development are not popular topics among local people. Thus, local people are reluctant to get involved in the policy making process particularly when the issue does not provide direct benefits to them.

Legislation

On 18 December 2018, *Perda* RE was finally legalized by the enactment of Local Regulation or *Perda* number 15 of 2018 regarding Renewable Energy. The *Perda* consists of ten chapters: general provision, utilization, type of renewable energies, education and training, research and development, cooperation and partnership, public participation, incentives, financing and closing. In regard to public participation, the *Perda* states that the development of renewable energy can be undertaken by multiple actors such as energy associations, financial institutions, academics, industry, technology, media, environmental activists and energy consumers.

Although a local regulation that specifically aims to improve renewable energy utilization has been enacted, it is still doubtful that the regulation can accelerate the development of renewable energy or give confidence to investors. The commitment to develop renewable energy from the provincial government is questionable as no target has been stipulated on the *Perda* RE. Moreover, *Perda* RE has not provided a roadmap and strategies to improve the utilization of renewable energy in Yogyakarta. The incentives within the *Perda* RE that are provided by the provincial government are limited to giving awards and facilitating licensing permits. These incentives are perceived to be less attractive for private investors and civil society actors when compared to subsidies, local tax reductions or the provision of land as the Keraton owns many lands.

To sum up, data dan information gathered during fieldwork have provided insight into how the formulation of *Perda* Renewable energy occurs in practice. *Perda* Renewable Energy was an initiative from DPRD Yogyakarta. The formulation process can be considered to be an open process as it involved multiple stakeholders such as the provincial government, experts from universities and NGOs. The discussion process provided an opportunity for stakeholders to share their inputs and concerns. Furthermore, the data and documents used during the discussion process are also available for public inspection. Some data are accessible through the official website of DPRD Yogyakarta and more detail can be obtained through making a request by official letter. However, there is a concern regarding the absence of private sector and local community involvement. This can be problematic for the implementation of *Perda* Renewable Energy in the future. While inputs from the private sector are needed to encourage capital inflow for investment, the involvement of local communities is required to obtain legitimacy and support to avoid conflict and delay in policy implementation.

6.2.3 Summary

This section outlined the formulation process of *Perda* RUED and *Perda* Renewable Energy (RE). It presented an overview of the policy making process in the energy sector at provincial level. Data collected have provided an insight into the ways in which transparency and public participation were practiced during the *Perda* formulation process.

From evidence collected during the fieldwork, it can be concluded that while transparency and public participation were evident during the *Perda* formulation process, some caveats remain. For example, the absence of local communities and renewable energy industries from *Perda* RE formulation has raised a concern about the level of transparency and the quality of public participation. Arguably, this has impacted on the arrangement within *Perda* RE. In the actual *Perda* RE, this study found that there are no clear strategies for developing renewable energy in Yogyakarta. Incentives to encourage the private sector and citizens to develop renewable energy are also insufficient. Furthermore, the relationship between the provincial and central government in terms of their roles in the coordination of energy policy formulation was found to be problematic. The lack of coordination between government levels has led to delays at provincial level in formulating the provincial energy policy or *Perda* RUED.

Data and information collected during the fieldwork with respect to the formulation process of *Perda* RUED and *Perda* RE have provided a basis for further analysis. Transparency and public participation will be examined further from the theoretical point of view in Chapter 7.

6.3 Renewable Energy Projects

This section provides an account of the development of two renewable energy power plants in Yogyakarta namely PLTH Pantai Baru and PLTMH Semawung. The selection of these power plants was based on the consideration that both plants have the largest capacity in

Yogyakarta and are still in operation. Furthermore, the difference on ownership status could provide insight into governance practices in the renewable energy sector.

6.3.1 PLTH Pantai Baru

Figure 6.2: PLTH Pantai Baru, Bantul District, D.I Yogyakarta

PLTH stands for *Pembangkit Listrik Tenaga Hibrid* or Hybrid power plant. It is called hybrid because the power plant utilizes more than one energy source. In this case, the energy is generated from solar and wind. This feature was designed to address the problem of the intermittent nature of renewable energy where solar power can only be effective in generating power during the day, while at night, energy can be generated by wind turbines.

PLTH Pantai Baru is located in a village in Bantul Districts called Poncosari, approximately 30 km south of Yogyakarta city. The village is inhabited by around 13 thousand people most of them working as farmers. The agricultural activity is supported by a 21,500 meter irrigation system and 23 dams with rice as the main crop. Furthermore, being located in a coastal area, the local economy is also supported by fisheries and small business.

The establishment of PLTH Pantai Baru was expected to support the economic activities of the surrounding area in agriculture, fisheries and tourism. In agriculture, it is anticipated that the electricity generated will be used to pump and distribute water during the dry season or when the water discharge is low. Thus, crop failures during the dry season can be avoided. For the fisheries sector, the energy can be used for producing ice to increase the durability of the fish catch. It is also planned that the energy obtained from renewable resources will be used to supply electricity for small businesses along the coast. A total of approximately 64 small shops and cafes will benefit. This is designed to support an increase in the number of tourists and students resulting from the presence of the wind turbines. Additionally, the energy will be used to power the street lights. In general, the renewable energy power plant was anticipated to have multiplier effects on the social, economic and environmental aspects of life in the area.

A range of actors from the central government, the district government of Bantul, civil society, and the private sector were involved in the establishment of PLTH Pantai Baru. However, there was no direct involvement from the provincial government of Yogyakarta during the development of PLTH Pantai Baru. This is because initially energy affairs were under the authority of the district government before the authority was transferred to the provincial government in 2014 based on Law number 23/2014 regarding Local Government. Table 6.1 shows the key stakeholders involved on the development of PLTH Pantai Baru.

Table 6.1: Actors Involved in the Establishment of PLTH Pantai Baru

Central Government	District Government of Bantul	Civil Society and Private sector
1. National Institute of Aeronautics and Space (LAPAN)	1. Bappeda Bantul 2. Department of Water Resources	1. University of Gadjah Mada (UGM) 2. Local Communities

2. Ministry of Energy and Mineral Resources (MEMR) 3. Ministry of Marine Affairs and Fisheries 4. Ministry of Research and Technology 5. Ministry of Small and Medium Enterprises 6. Ministry of Environment and Forestry 7. The Indonesian Institute of Sciences (LIPI)	3. Department of Public Works 4. Department of Agriculture 5. Department of Marine and Fisheries 6. Department of Industry, Trading, and Cooperation	3. Private Sector: E-wind energy and PT Indmira

Source: Author's fieldwork data

From the central government, the Ministry of Research and Technology was the coordinator of the project. PLTH Pantai Baru is planned to become a pilot project of hybrid power plant and a research center for renewable energy in Indonesia. LAPAN and LIPI were involved in the process of research and development of the renewable energy power plant. Furthermore, as the project is in line with the National Energy Policy in regard with improving the renewable energy uptake rate, the Ministry of Energy and Mineral Resources (MEMR) also gave technical support and monitored the project. The Ministry of Marine Affairs and Fisheries contributed by giving an ice maker machine powered by electricity from PLTH Pantai Baru to support local fishermen in storing their fish. Additionally, the Ministry of Small and Medium Enterprises and the Ministry of Environment and Forestry were involved to support the development of local business and the sustainability of local environment.

At district government level, Bappeda Bantul coordinated several departments which have specific authorities related to the establishment of PLTH Pantai Baru. The management of PLTH Pantai Baru would be under the Department of Water Resources which is in charge of energy affairs in Bantul. Other departments in the Bantul government such as the Department of Fisheries, the Department of Finance and the Department of Industry, Trading and

Cooperation were involved accordingly based on their specific authorities. Furthermore, a university, local people and private actors were also involved during the development of PLTH Pantai Baru. Gadjah Mada University (Yogyakarta), one of the prominent universities in Indonesia, was invited to measure the project feasibility and explore the prospect of renewable energy development in Yogyakarta. The university also had a role to disseminate information regarding the impacts and benefits of renewable energy to local people. Additionally, two private energy companies, namely E-wind energy and PT Indmira, were involved in establishing wind turbines. The development process of PLTH Pantai Baru is illustrated in Figure 6.3.

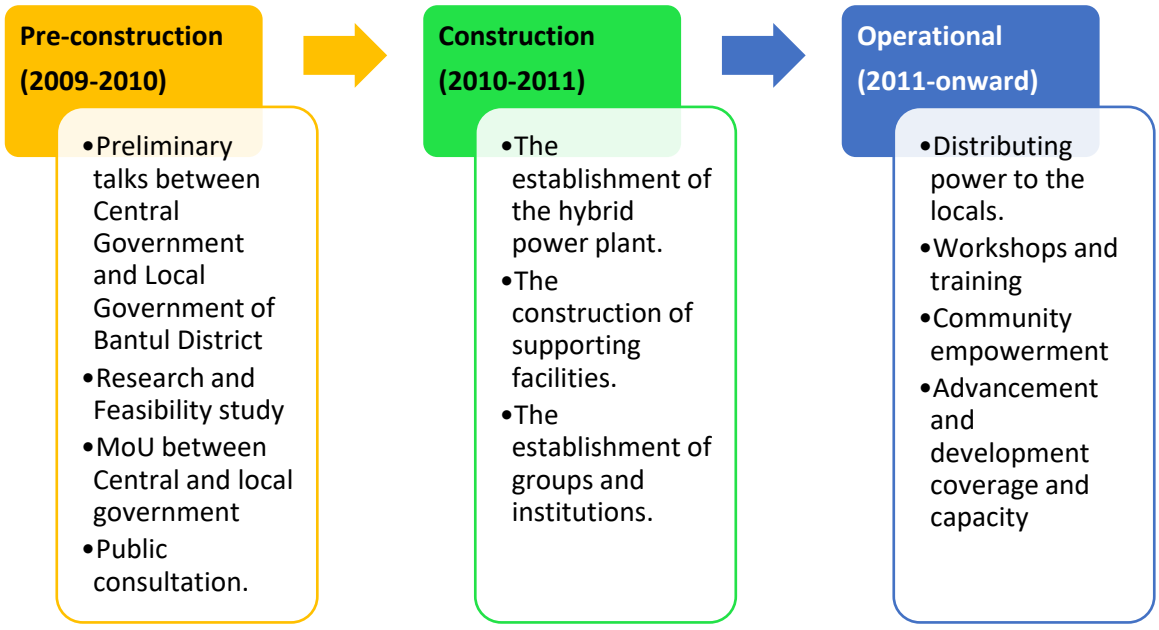


Figure 6.3: The Development of PLTH Pantai Baru

6.3.1.1 Phase 1 - Pre-construction Stage

The initiative to develop renewable energy in the Pantai Baru area came from the National Institute of Aeronautics and Space (LAPAN). Initially, the area was used by LAPAN to hold rocket launching competitions. The strong wind and bright sunshine in Pantai Baru has been seen by LAPAN as providing a basis for the development of renewable energy. The idea was

then discussed with the Head of Regional Planning Agency (Bappeda) Bantul and it received a positive response particularly because during that time the area had no access to electricity.

In June 2010, a partnership agreement between the Ministry of Research and Technology, LAPAN and Bappeda Bantul was signed to advance the PLTH Pantai Baru project. A spatial outline for the location of renewable energy was also designed. Furthermore, surveys and a feasibility study were conducted in order to determine the optimum position for installing wind turbines and solar panels.

The power plant was planned to be constructed in an area of 37 hectares located upon the Sultan's grounds. Thus, in order to be able to utilize the land, permission from the Sultan was mandatory. The permission from the Sultan was obtained by the Bantul Government. The landscape mostly consists of open land located next to the coast and facing towards the Indian Ocean. The area was characterized by an average wind speed of around 4 meter/second and the sun shines almost all year with the temperature ranging between 22oC to 37oC. The design was to build a small-scale power plant with a capacity of approximately 90 Kilo Watt (KW) which comprises 37 wind turbines and solar panels.

The Bantul government considered that it is imperative to acknowledge the local people's perspectives in order to smoothen the project development. As the report document about the development PLTH Pantai Baru noted:

> *"Dialogues with local people were held to acknowledge local socio-cultural patterns. It is important to gain information about custom, values, and mindsets which have become a convention for local people. Thus, the government can make adjustments in order to avoid conflict with local cultures." (Ministry of Research and Technology, 2011, p. 28)*

The report document also revealed that a number of public hearings were conducted before the construction of PLTH Pantai Baru. The number of participants varied. In one of the public hearings, all of the people that live around the future project location were invited. In this

forum, approximately one hundred people, men and women, attended the event. Other public hearings by contrast involved a smaller number of participants, such as leaders of community groups and local figures (Ministry of Research and Technology, 2011).

The purpose of holding public hearings was twofold. First, it was aimed to disseminate information regarding the development plan of PLTH Pantai Baru, such as the exact location of project, the activities to be undertaken and the potential impacts caused by the establishment. A local person who now works as an operator of PLTH Pantai Baru confirmed these facts about the public hearing. He asserted:

> *"Before the project started, we were given the information regarding the project. The government also educated and trained us on how to operate and maintain the hybrid power plant. (Interview with author 2018)*

Second, the public hearing was aimed to identify concerns from the local community. One of the concerns was about the extent to which the project would benefit local people. As a leader of a local community group or *pokgiat* stated:

> *"I am doubtful that the wind turbines would provide sufficient power to operate water pump for agricultural land. Because that has happened in Kuwaru, an area near to Pantai Baru where wind turbines have only generated limited power, thus water produced was very little and not enough to water the agricultural land. As a result, now wind turbines in Kuwaru have been replaced by fossil-based energy. However, I hope wind turbines in Pantai Baru could produce energy for community need."* (Ministry of Research and Technology, 2011).

Other benefits for local farmers, fishermen and business were also identified by the government. These included water for farmlands, ice to improve fish storage and electricity for local shops. This approach has helped the project to gain acceptance from local people.

Local farmers also shared their concerns about the farmlands as they were using the Sultan's grounds for their agricultural activities and such grounds would be the location of the project site. They were afraid that they will lose their farmland if the Sultan grants a permit to establish PLTH Pantai Baru and therefore lose their source of income (Interview with author 2018). However, this issue was addressed. Bantul government guaranteed that the local farmers still be able to use their farmland around the project site.

Given that the pre-construction phase was characterized by transparency and public participation, the project has gained a positive response from local people. Information was disseminated and concerns were addressed. Consultations with local people have enabled the central and local governments to adapt the project's objectives to the local people's needs. PLTH Pantai Baru was aimed to develop renewable energy and has direct impacts on the local economy, such as tourism, agricultural and fisheries.

6.3.1.2 Phase 2 - Construction Stage

The construction of PLTH Pantai Baru started in June 2010 and ended in mid-2011. The project site was divided into two blocks: West and East blocks. The East block consists of 13 wind turbines with the capacity of 15 kilo Watt (kW) and 2.5 kW solar panels. A main control room, batteries storage, two ice maker machines, one ice storage and fish ponds were also built within the East Block. The fish pond was built to utilize vacant land under the solar panels. The West Block consists of 21 wind turbines with the capacity of 25 kW and 15 kW solar panels. A lightning rod and fish ponds were also built on the west block, in addition, public facilities such as a mosque, toilets, entrance gates and an iconic statue. In total, 34 wind turbines and 17.5 kW solar panels were installed.

Figure 6.4: Wind Turbines in PLTH Pantai Baru

Figure 6.5: Solar Panels in PLTH Pantai Baru

The power plant is classified as an off-grid system meaning that it stands independently and is not integrated with the power network of PLN. The main reason was because during 2010

– 2011, Pantai Baru did not have electricity access as power network of State Electricity Company (PLN) had not covered the area. Thus, it could not be integrated with the PLN grid.

The construction of PLTH Pantai Baru involved multiple actors from different institutions located within the central and local governments. The private sector was also invited to establish part of the project. As an official from Bappeda Bantul said:

> *"LAPAN was the first institution that started building the power plant, then Ministry of Research and Technology followed up the construction. Private sector such as PT E-wind energy also participated in the construction process."* (Interview with author 2018)

In general, there were no significant obstacles or resistance encountered during the construction process. The construction process was dominated by the Ministry of Research and Technology. The main reason is the availability of human, technological and monetary resources to support the project. Meanwhile, the Bantul government was mostly active in the provision of the land for the hybrid power plant.

Although the construction process was mainly performed by the central government, the involvement of the E-wind Energy Company demonstrated an openness to private sector involvement in the energy sector. In fact, the central and local governments expect the private sector to become more active in developing renewable energy. However, an academic from UGM argued this must be supported by clear regulation and an incentive framework (Interview with author, 2018. The construction of the hybrid power plant finished and became operational in 2011.

6.3.1.3 Phase 3 - Operational Stage

In August 2011, PLTH Pantai Baru became functional with the potential to produce a power capacity of 90 kilo Watt (kW) per day. The PLTH operator claimed that although the power

generated was relatively small, PLTH Pantai Baru has brought significant benefits to the residents of Pantai Baru.

The electricity generated was distributed to support tourism, agriculture and the fisheries sector. With respect to tourism, the electricity generated from PLTH Pantai Baru was distributed free to around 60 local shops in the coastal area. A business owner argued that the electricity was only sufficient for light bulbs and a small fan, not enough to power a fridge or a rice cooker. Despite the limitations of power capacity, shop owners were still grateful for the existence of the hybrid power plant. This was not only because of the electricity produced, but also because the presence of the wind turbines has attracted tourists, students and researchers to this area. The increasing number of visitors has had a substantial impact on their sales transactions.

Figure 6.6: Shops in Pantai Baru Area

The hybrid power plant also enabled the water pump machine to deliver water to the farmland. This has answered doubts expressed by local farmers about whether renewable energy could actually function. The water pump has reduced the production cost of their commodities

because before PLTH Pantai Baru operated, the farmers spent extra money to irrigate their farmlands. Furthermore, the fishermen were now able to have ice to put in the fish storage. As a result, the fish selling price is higher and therefore the fishermen have a better income.

PLTH Pantai Baru has sought to involve the local community since the first day of its operation. To manage the operation of PLTH Pantai Baru, a special unit consisting of local people was formed. In recruiting the locals, Bappeda Bantul collaborated with the village chief and local figures to approach people who have an interest in electricity and renewable energy. These local youth were selected to be educated and trained by LAPAN and the Ministry of Research and Technology and Gajah Mada University. As one of the operators claimed:

> *"At the beginning, we (the operators) did not have knowledge about renewable energy. The operator and technician in this PLTH are local people. We were educated and trained by the government for about three years now."* (Interview with author 2018)

On top of that, some of the unit members have been given the opportunity to take a renewable energy course in Germany for three months. This unit became the main actor that maintains and operates the hybrid power plant. To date, the unit has eight members who have the responsibility to maintain PLTH and to distribute the electricity generated from wind turbines and solar panels to the local people.

Furthermore, the extent of participation of the local community in managing the area of Pantai Baru has increased since the area has become a popular tourist destination due to the existence of the hybrid power plant. For example, a community group was formed to manage edutourism (education and tourism). The group was initiated by Gajah Mada University. This group was formed to organize tourism businesses along the coastal area and introduce renewable energy to the tourists. Since the start of PLTH Pantai Baru, many people have come to PLTH Pantai Baru not only to enjoy the beach but also students and scientists came

to learn about the hybrid power plant. Furthermore, many local people switch their profession or have side job that related with tourism and culinary sector.

The process of disseminating information and training the locals has successfully increased the sense of belonging among local people toward PLTH Pantai Baru. This transparency and public participation has made local people feel that PLTH Pantai Baru has become a part of their life as the locals are aware that PLTH Pantai Baru provides them with direct benefits. The knowledge that they have obtained and their opportunities for involvement have raised local people's awareness and made them eager to engage with the project.

In 2013, PLN started to build a power network in the Pantai Baru area. The emerging economic condition of Pantai Baru area has attracted PLN to extend its power network to the area, one which was based on fossil energy. As a local person revealed:

> *"There was no electricity in this area before. Renewable energy has become a powerful engine of local economy. After the economic condition in here was improving, PLN came and build its power network." (Interview with author 2018)*

The presence of PLN has slowly weakened the role of PLTH Pantai Baru. Some of the local shops have switched to use electricity provided by PLN. Their main reason for doing so is because the PLN power network provides a bigger and more stable energy supply (Interview with author 2018).

6.3.1.4 The Transfer of PLTH Pantai Baru

In 2016**,** PLTH Pantai Baru was handed over from Bantul District to the Provincial government of Yogyakarta. This was due to the enactment of Law number 23/2014 regarding Local Government which stipulates that energy affairs must be under the authority of the provincial government. It also states that the transfer process should be done within at the latest two years after the enactment. The transfer includes assets, personnel, financing and administrative documents in the energy sector.

Since its transfer to the provincial government of Yogyakarta, the PLTH Pantai Baru has been in decline. This can be seen from the damaged condition or decreased quality of some components on PLTH Pantai Baru. One of the operators claimed that only 20 out of 34 wind turbines are now operating as there are no replacements for broken components of the wind turbines. Additionally, the condition of the batteries that store the energy generated from wind turbines and solar panels has degenerated. This is because the batteries have not been replaced since 2010 while ideally, they should be replaced every five years.

Another problematic condition also occurred as a result of the transfer of personnel that operate PLTH Pantai Baru. Based on the provision of Law number 23/2014 regarding Local Government, the transfer of authority over the energy plant also included the transfer of its personnel from the Bantul Government to the Yogyakarta Province Government. However, of the eight personnel, only six have been recruited by the provincial government, while the others are left hanging without a clear future. From the interview, one of the PLTH operator conveyed:

> *"I feel really disappointed when I am asked about our employment status. The number of operators here in this PLTH are eight people. But now after energy authority was moved onto the provincial government, the payroll is only for six people. The employment status of other two was unclear until now which means they do not get paid from the provincial government while still doing their job any payment. As a form of solidarity, we decided to share our payment for the other two. In other words, the payment for six people was shared equally for eight people." (Interview with author 2018)*

Arguably, the lack of commitment from the provincial government has resulted in the poor condition of PLTH Pantai Baru. Bappeda Bantul which was one of the institutions involved in the early development of PLTH Pantai Baru, confirmed the poor condition of the plant and the lack of commitment from the provincial government. An official revealed:

> *"We have received a report that the PLTH Pantai Baru is in poor condition. The provincial government is not as keen as us in managing PLTH. Maybe, provincial government is busy as many other programs in there. We have not coordinated yet."* (Interview with author 2018)

The operator of PLTH Pantai Baru also backed the statement from Bappeda Bantul. He maintained:

> *".....Later, PLTH Pantai Baru was handed over to provincial government. It seems that the provincial government does not welcome us. They only accepted us because of the law provision." (Interview with author 2018)*

He also added:

> *"The provincial government is not serious about future development of renewable energy… They felt burdened with the transfer of energy affair under their authority." (Interview with author 2018)*

The lack of commitment from provincial government was reflected in the budget allocated for the operation and maintenance of PLTH Pantai Baru. In 2017, the budgetary allocation by the provincial government for PLTH Pantai Baru was halved from what it had been under the district government of Bantul. One of the operators revealed:

> *"Now, it is very difficult to obtain operational and maintenance funding… Last year, the budget was cut down from Rp90 million to Rp40 million and it was paid in October which is very late because ideally the maintenance process needs to be done since the beginning of the year...* We have tried to convey our concerns, but there is no response from them until now…" *(Interview with author 2018)*

Transparency has also become an issue. The calculation method used for budget allocation for PLTH Pantai Baru was not clear. There was no clear explanation from the provincial government about the basis of the allocation and the reasons why the budget was halved. In

the interview, the official from Department of Energy Yogyakarta only stated that the reason was the limitation of fiscal resources without providing a detailed explanation.

Public participation was also lacking after the management of the plant was transferred to the provincial government. The formulation of the budget allocated for the operation and maintenance of PLTH Pantai Baru occurred without any form of consultation with the operators. Additionally, the local community felt ignored as the provincial government never discussed with them anything regarding the future of PLTH Pantai Baru after the transfer had been done. A public forum for the purpose of holding discussions, conveying the people's aspirations, disseminating information or providing training was never conducted after the provincial government assumed responsibility for the management of PLTH Pantai Baru. These factors have made the future of PLTH Pantai Baru more uncertain.

Training and workshops for human development were also never held again as the provincial government does not have a clear path regarding the future of PLTH. This is a setback, as at an early stage, training and workshops were conducted and this improved the skills and awareness of local people regarding the importance of renewable energy. Training and workshops also fostered a sense of ownership among local people with regard to PLTH particularly when it has a direct impact on their life. By increasing the extent of people's participation, these measures had helped to maintain sustainability and to develop renewable energy. From an interview, an operator argued that it is important for the government to engage with the local people and to educate them through workshops. He also adds:

> *"Without the involvement of local people, it will be difficult to develop renewable energy. Renewable energy actually has been tried to be developed in many regions of Indonesia, but how many of them still survive? I doubt it... That is because there will be no continuity without involvement from the local people." (Interview with author 2018)*

In order to clarify the statements from the operator and Bappeda Bantul, the author conducted interviews with officials from the Department Energy Yogyakarta and Bappeda Yogyakarta.

It became clear that the development of PLTH Pantai Baru is not a priority program for the provincial government, particularly after the area has been covered by PLN's power network.

The Department of Energy Yogyakarta argued that the provision of Law number 23/2014 regarding Local Government has forced them to assume responsibility for developing renewable energy for the entire province. This has burdened them with additional responsibilities, while the provincial government has imposed limitations especially with regard to finance and human resources. As an official from Department of Energy asserted:

> *"We are not ready if all the authorities handed over to us... We do not have sufficient budget... Nowadays, the direction of PLTH Pantai Baru is unclear…" (Interview with author 2018)*

The lack of commitment could also be attributed to the perception that the impact of PLTH Pantai Baru was not as significant as it had been before PLN provided the area with a power supply which is mostly sourced from coal. An official from Department of Energy conveyed:

"Only university students benefit from PLTH Pantai Baru as their learning sources. After we calculated, the impacts of PLTH Pantai Baru is not significant anymore, particularly after PLN has covered and supplied the area with their electricity network." (Interview with author 2018)

The statement from Department of Energy Yogyakarta was also supported by the Provincial Planning Agency (Bappeda) Yogyakarta. An official argued:

> *"Regarding PLTH Pantai Baru, we believe that the maintenance cost is significantly higher than electricity produced." (Interview with author 2018)*

Furthermore, looking back to the pre-construction stage, the provincial government had not been officially involved or consulted regarding the development project. The central government only communicated with the district government of Bantul in developing the project of PLTH Pantai Baru. Therefore, the provincial government does not have sufficient information on the importance and impacts of the PLTH Pantai Baru.

In response to the issue of the personnel status of PLTH operators, an official from the Department of Finance of the provincial government claimed that regulation was the main cause of the problem. Of the eight personnel, six were under the control of the Bantul Government, while two personnel were under the control of the Ministry of Fisheries of Central Government. The mechanism for transferring personnel from the Bantul district to the provincial government is clear, whereas the mechanism for transferring personnel from the ministry to the provincial government has not been clearly stipulated in regulations. Thus, the personnel status of the two PLTH operators remains unclear until now. However, the situation regarding the personnel status was never communicated to the operators.

In summary, from examining the overall development process of PLTH Pantai Baru, it can be concluded that levels of transparency and public participation tended to decline over time. At the early stages of the project, the local community were actively involved in the decision-making process. People were provided with the opportunity to express their opinions about the project and to be heard. As a result, the project gained support from the local people and the construction process went ahead smoothly.

However, after the management of PLTH Pantai Baru was transferred from the Bantul district government to the provincial government of Yogyakarta, the levels of transparency and public participation declined. The main reason for this is because the area is now powered by PLN. The infiltration of PLN in 2013 has weakened the significance of PLTH Pantai Baru as PLN provided Pantai Baru with a bigger capacity and more reliable power supply.

Another reason is that the provincial government has limited financial and human resources to further develop PLTH Pantai Baru, as an interview with an official from the Department of Energy Yogyakarta confirmed. Furthermore, the provincial government has affirmed that they do not have the intention to further develop PLTH Pantai Baru and believe that the cost of developing PLTH Pantai Baru greatly exceeds the expected benefits or outcomes.

The lack of intention to further develop PLTH Pantai Baru has impacted on how PLTH Pantai Baru is governed. The practices of transparency and public participation which were the main factors that underlay the improvement of the socioeconomic condition of the local people have faded away. This can be seen in the lack of transparency in the formulation of the operation and maintenance budget and in the lack of consultation with the operators. Furthermore, a program of training to improve knowledge and a wider consultation process regarding the future development of the project were never conducted. These omissions have resulted in a poor condition of PLTH Pantai Baru and they potentially threaten the development of other renewable energy projects.

The current condition of PLTH Pantai Baru has placed a big question mark over the extent of commitment from the provincial government in developing renewable energy. On the one hand, *Perda* Renewable Energy was launched to accelerate the development of renewable energy, but on the other hand PLTH Pantai Baru is not strongly supported.

6.3.2 PLTMH Semawung

Figure 6.7: PLTMH Semawung in Banjar Harjo Village, Kulon Progo

PLTMH stands for *Pembangkit Listrik Tenaga Mikro Hidro* or Microhydro Power Plant. PLTMH Semawung is located in Banjar Harjo village, district of Kulon Progo approximately 25 km North West of Yogyakarta city. Banjarharjo village is inhabited by approximately 7,000 people with the proportion of men and women of 49 percent and 51 percent respectively (The Governemnt of Banjarharjo Village 2019). Most of Semawung's people work as farmers and they rely upon the Kalibawang irrigation system to water their farmlands. Banjarharjo village already had power access provided by PLN before the establishment of PLTMH Semawung.

The PLTMH Semawung project started in 2012. It was developed by PT Energy Puritama, a private micro hydro power company. The energy of PLTMH Semawung sourced from Progo River by utilizing Kaliwabang irrigation system. With the flow rate of 7.25m3/second, PLTMH Semawung has the capacity to produce power of 600 kilo Watt (kW) per day.

To obtain an in-depth understanding of the establishment of PLTMH Semawung, an interview was conducted with the CEO of PT. Energy Puritama, which is an independent or private

power producer that developed and operated PLTMH Semawung. The interview took place in the office of the PLTMH Semawung in Yogyakarta on 4 July 2018.

From the interview, multiple actors involved in the development process were identified. From the central government, the Ministry of Energy and Mineral Resources (MEMR) was involved in granting the principal permit related to the power purchasing business with PLN. Additionally, the Ministry of Public Works and Housing has the authority to issue permits concerning the utilization of the stream of Progo River as the Progo river flows through two provinces namely Central Java and Yogyakarta. When the river flows within a province, the permits need to be obtained only from the provincial government.

At the sub-national and local levels, the development of PLTMH Semawung involved the provincial government, the district government of Kulon Progo and the village office of Banjarharjo. The provincial government issued a permit to use the location based on the recommendation from the Kulon Progo government. Furthermore, the Kulon Progo government also issued the recommendation related to the environmental permit. Additionally, PT. Energy Puritama communicated with the head of Banjarharjo village to obtain acceptance of the project establishment from the local community.

The development of PLTMH Semawung also involved the State Electricity Company (PLN) as the sole distributor of power in Indonesia. Therefore, PT. Energy Puritama was required to sign a business agreement with the PLN regarding the selling of power generated from the PLTMH. Furthermore, local communities were also involved in the consultation process before the construction of PLTMH Semawung began.

The process of the development of PLTMH Semawung took place during 2012 - 2017. The development can be divided into three phases, namely pre-construction stage, construction stage and operational stage.

6.3.2.1 Phase 1 - Pre-construction Stage

The establishment plan of PLTMH Semawung started from 2012. There was evidence of public participation before the construction process began. Energy Puritama conducted public consultations with the local people to gain acceptance and smoothen the project implementation. To do so, Energy Puritama approached the head of Banjarharjo village and the Kulon Progo government to facilitate public hearings and consultations with local people.

In this project, public consultation was a fundamental element of the project as it aimed to gain acceptance from local people. This is because during the construction process of PLTMH Semawung, the water supply from Kalibawang irrigation system for the local people would be affected. The irrigation system is the main water source for local people to water their farmlands and to satisfy their daily needs as most of people did not have wells or other water sources in their houses.

Several public meetings were conducted between PT. Energy Puritama and the local community together with the local government. The company claimed to disseminate sufficient information regarding the impacts of PLTMH Semawung construction during the meetings. The company also promised to provide free electricity for street lights and houses around PLTMH Semawung and to build a paved road around the area of PLTMH. These actions by the company can be identified as key factors that facilitated a smooth consultation process and that helped the project to obtain acceptance from the local people.

The involvement of local people in the pre-construction process was confirmed through an interview with a resident. He stated:

> *"At the earliest stage, they (Energy Puritama) promised to provide paved-road access, street lightings and free electricity for surrounding households..." (Interview with author 2018)*

The local government also helped by convincing local people that the existence of PLTMH Semawung would benefit them and would not disturb their water supply. The involvement of local government has facilitated public acceptance of the PLTMH Semawung project. This is connected with the local culture. Local people maintained that the people of Yogyakarta tend to be submissive to the government. Thus, as long as the company was granted permission from the local government, it is most likely that local people are going to accept the project as well. The local people perceive that the local government represents the Sultan who is both the governor and the king of Yogyakarta, roles that are widely respected by the Yogyakarta people. An informant also revealed that it is common that people are reluctant to question the Sultan's or government's decision.

Simultaneously, during this stage, the company was applying for permits. In general, three types of permit must be obtained: a business permit, a location permit and a water utilization permit. The business permit was issued by the central government through the MEMR. This permit is required to conduct business activities within the renewable sector and as a requirement for making a business agreement with the PLN. From the interview, the officials from Energy Puritama claimed that the process to obtain the permit was relatively easy and fast as the procedures were clear and transparent.

Furthermore, the location permit and environmental permit were gained from the provincial government based on the recommendation from the Kulon Progo government. The area used for PLTMH Semawung was partly located on the Sultan's Grounds. Therefore, a permit from the Sultan or provincial government was required. Energy Puritama claimed that the district government of Kulon Progo was supportive, thus obtaining a permit was easy. As the director of Energy Puritama revealed:

"When establishing business in other regions, some Majors said "wani piro?"[6]. But Mr. Hasto (the major of Kulon Progo) did not ask for a penny from the PLTMH project..." (kulonprogokab.go.id, 2013)

An issue regarding transparency occurred during the process of obtaining a permit to utilize the water source. The process was considered by PT. Energy Puritama to be complex and without a clear procedure. As the CEO argued:

"Permits gaining process particularly water source utilization was a crucial stage that determines project's future. This stage was the longest and most exhausting process in developing PLTMH Semawung. The process was time consuming, too many requirements should be met, and too many authorities should be dealt with." (Interview with author 2018)

After all the permits were obtained, Energy Puritama was required to secure a business agreement with PLN. PLTMH Semawung is categorized as an on-grid power plant which means that it is integrated with the PLN network and the electricity generated from PLTMH is transferred and sold to PLN. Thus, the commercial activity needs to be preceded by a business agreement between PT. Energy Puritama and PLN.

The process of contract negotiation lacked transparency particularly in determining the selling price. An informant from PT. Energy Puritama revealed:

"*It is possible that the buying price is changed just before the agreement. There was no discussion before regarding the tariff reduction…The buying price was also lower than what was stipulated in the regulation of Ministry of Energy and Mineral Resources." (Interview with author 2018)*

The business agreement was signed on April 2016. However, the business agreement did not run normally as PLN overpowered the private energy companies in determining the price. This has lowered the expected profit margin of private energy companies.

[6] "Wani piro" is a local term meaning "how much". The term implies how much the company willing to give or bribe the government official to get easy access or permits in doing business.

An informant from PT. Energy Puritama also added why this is the case:

> *"PLN realized that they have higher bargaining position and has the power to push private company to subject onto their will. The first reason is because PLN does not necessarily need the electricity supply from the IPP. To date, there is a surplus of power supply in Java Island, meaning that power generated is bigger the demand or consumption rate. This partnership occurred because renewable energy has become the government's political agenda. The central government urged PLN to improve renewable energy share within its energy account. The second reason is because we as the private power producer have already spent substantial amount of money. It is almost impossible for us to back down from the agreement."* (Interview with author 2018)

6.3.2.2 Phase 2 – Construction Stage

The construction of PLTMH Semawung began in May 2013. PT Energy Puritama began to construct PLTMH Semawung after a business permit from MEMR and a location permit from the local government were obtained. However, the water utilization permit was still in process. PT Energy Puritama claimed that the water utilization permit was proposed in 2014 and finally granted in 2016. The construction was carried out in an area of 2,000 m2 with a total investment of around Rp10 billion or around USD 700,000.

The construction of PLTMH Semawung was conducted by PT Energy Puritama. The company was urged by the government to prioritize utilization of domestic components. PT. Bina Pertiwi, the manufacturer of machineries for PLTMH Semawung, claimed that the percentage of domestic components used for the project was around 80 to 90 percent (Solopos, 2013). Overall, the construction went smoothly without any significant obstacles and finished in 2016.

6.3.2.3 Phase 3 - Operational Stage

PLTMH Semawung started to operate in 2017. The operation of PLTMH Semawung is under the control of Energy Puritama. PLTMH Semawung has the capacity to produce 600 kW per

day. Considering the water cycle and maintenance program, PLMTH Semawung is estimated to operate 290 days in a year.

After starting to operate, PLTMH Semawung delivered limited benefit to local people. This could be the reason why local people tend to be skeptical about renewable energy development.

Unlike Pantai Baru, the area of Semawung was already provided with electricity access from PLN before PLTMH was established. Thus, in terms of power supply, the existence of PLTMH Semawung has not brought any new benefits for the local people. One of the local people stated:

> *"Basically, the condition is still the same as before… Nothing has really changed… They promised to provide paved-road access, street lightings, and free electricity for surrounding households, but nothing is realized until today…They are here just for profit." (Interview with author 2018)*

Furthermore, the types of socio-economic benefits that had flowed from the establishment of PLTH Pantai Baru could not be found in the case of PLTMH Semawung. There was a lack of community empowerment or social programs to improve people's knowledge or welfare. Local people were not involved in the operational process. Additionally, the company has not sponsored any social programs to empower the local community or to educate local people regarding the importance of sustainable energy options.

In regard to economic impact, only one small convenience shop was built after the PLTMH Semawung was established in the area. The shop's owner conveyed:

> *"After PLTMH Semawung established here, people are starting to come down to this area. Most of them are students and researchers who want to learn about renewable energy. This has impacted to our shops with the increasing number of transactions." (Interview with author 2018)*

The shop owner also added there is another shop that was built after the establishment PLTMH Semawung, but after an investigation, no other shop could be found. Although, there has been an economic benefit for the locals, the impact was very limited.

In fact, a negative impact was found during the operation of PLTMH Semawung. As mentioned before, PLTMH Semawung utilizes the Kalibawang irrigation system which is the main water source for local people. However, the company has closed the irrigation system to fix broken components. Thus, the water supply through the irrigation system has stopped.

Figure 6.8: The closure of irrigation system has stopped water supply for farmlands and livestock

During a visit to the Semawung area, the researcher found that the irrigation system remains closed as can be seen in Figure 6.8. The closure was applied for three months and was done without notification to or consultation with the local people. A resident conveyed:

> *"...this closure was not the first time. Usually closures for PLTMH maintenance lasted no longer than 5 days. But, now it has been three months and done without any notification."* (Interview with author 2018)

Furthermore, when asked about whether any compensations given for the closure, he added:

"They (Energy Puritama) said they will give compensation, but there is nothing given until now." (Interview with author 2018)

The closure has had a significant impact on the people of Semawung. The irrigation system is fundamental to support farmland, livestock and daily routines such as washing and bathing. The closure has left farmlands dry and has caused crop failures for the farms. Moreover, local people have to incur additional costs to connect with water provider companies in order to get water for their livestock and daily routines, while the farmlands were left abandoned.

Even though the closure has caused significant damage to farmland and to farmer's incomes, there were no demonstrations or mass actions to protest against the closure of irrigation system. Instead, a complaint from local people was lodged through the village officials who then conveyed it to and talked it over with the PT. Energy Puritama. PT. Energy Puritama responded by giving an explanation and promised to open the irrigation system immediately. The irrigation system was finally opened after the three-month closure. From the observation, local people particularly the elderly tend to have the characteristic of "nerimo" or always being grateful for whatever the condition is. As a resident stated:

"No... we don't do protest or demonstration. We are only marginal people… we accept what has been destined to us…" (Interview with author 2018)

At the time of writing, PLTMH Semawung was operating. Unlike PLTH Pantai Baru, PLTMH Semawung is not socially connected with the local community. As a business entity, its main purpose is to maximise efficiency in order to gain higher profit. Thus, it is unlikely that the company will hold public forums to educate people or have concerns about their interest as it can be costly and time consuming (Irvin & Stansbury, 2004)

6.3.3 Summary

Transparency and public participation have become key elements in the implementation of renewable energy projects. In the case of both PLTH Pantai Baru and PLTMH Semawung,

transparency and public participation played important roles in securing people's trust in and acceptance of the construction of renewable energy power plants in their community.

However, the extent to which transparency and public participation were implemented in both projects tended to decline after the start of operations. In PLTH Pantai Baru, the change of management from district government to provincial government appears to be the main causal factor. The provincial government lacks commitment to further developing PLTH Pantai Baru which has impacted on the governance process of PLTH. Public forums for sharing information and to convey the public's concerns were never conducted. Additionally, PLN's infiltration has also had an adverse effect on the commitment of the provincial government. PLN's infiltration has provided the area with its power supply. As a result, the provincial government understated the impact of PLTH for the Pantai Baru area. Now, PLTH Pantai Baru is in a poor condition and has an unclear future.

In PLTMH Semawung, there was evidence of transparency and public participation especially before the construction of PLTMH began. A number of public meetings were held to disseminate information and to communicate the benefits of the project. However, it seems that the purpose that lay behind this transparency and public participation was ultimately to gain public acceptance of the project rather than to encourage meaningful participation that would address local people's concerns.

Furthermore, support from various governments including those at central, provincial and district levels are vital. In PLTH Pantai Baru, active participation from the local community alone was inadequate to develop the PLTH. This is because local people have limitations of resources such as skill, knowledge and finance. For example, some components such as the inverter and micro converter used advanced technology components which required special skills to operate and are usually costly to replace. Thus, support and strong commitment from

the government is imperative to educate, supervise and provide financial support so as to enable the further development of renewable energy in Yogyakarta and Indonesia as a whole.

6.4 Conclusion

This chapter presented data and information regarding energy governance that were obtained during fieldwork in Yogyakarta. Evidence were presented in chronological order so as to describe the formulation of the *Perda* RUED and *Perda* Renewable energy and the establishment of PLTH Pantai Baru and PLTMH Semawung. The investigation focused on two governance indicators, namely, transparency and public participation.

In the *Perda*-making process, the study found mixed results for transparency and public participation practice. While some good practices were identified, some deficiencies were also evident during the renewable energy governance process. Good governance practices were demonstrated by the openness of the formulation process. The executive and legislatures were transparent regarding data and documents related to both *Perda*. Furthermore, there was involvement from universities, NGOs and the private sector that enabled them to convey their inputs during the consultation meetings. On the other hand, some deficiencies were also identified. The lack of involvement of local communities and of private energy industries in the *Perda* formulation processes has raised a concern about the transparency and inclusivity of the *Perda*-making process. Arguably, the lack of transparency and involvement of relevant stakeholders has adversely affected the quality of *Perda* and potentially caused delays to their implementation.

In the establishment of PLTH Pantai Baru and PLTMH Semawung, information from the fieldwork suggests that transparency and public participation were evident in the pre-construction process where consultations with local people were conducted in order to disseminate information regarding the benefits and impacts of the project's establishment. However, some concerns were also found. During the operational process, transparency and

public participation tended to fade in the cases of both PLTH Pantai and PLTMH Semawung. The local community was not provided with sufficient information and were unable to meaningfully engage with the project or to exercise control over it in a way that could provide them with benefits or enable them to avoid damage. In the case of PLTH Pantai Baru, the decline in the level of transparency and participation occurred after the assets were transferred to the Provincial government. Similarly, the implementation of transparency and public participation was barely visible after the operational stage. This can be seen from the closure of the irrigation system by the company which was done without the consent of the local people.

A more detailed analysis of data and information presented in this chapter will be provided in the next chapter which aims to assess the substance and outcome of transparency and public participation in the governance systems of Yogyakarta. Other issues regarding the implementation of transparency and public participation are also discussed.

CHAPTER 7
FINDINGS, DISCUSSION, AND ANALYSIS

7.1 Introduction

The previous chapter presented the evidence gathered during fieldwork in Yogyakarta regarding renewable energy governance arrangements in order of they took place. Data and information were based on interviews, document analysis, official reports, news articles and the researcher's observations made during the fieldwork. The formulation process of two Local Regulations or *Perda* related to renewable energy and the establishment of two renewable energy projects were described, with a focus on the state of two governance indicators, namely, transparency and public participation. Moreover, the roles of multiple stakeholders during the governance process were also highlighted.

This chapter will present the findings and expand the analysis of renewable energy governance presented in the previous chapter by using the analytical framework discussed in Chapter 3. The level of transparency and public participation demonstrated in the governance systems of Yogyakarta are scrutinized from the perspective of both process and outcomes in order to gain an understanding of the relationship between governance and renewable energy development. Barriers to effective governance related to transparency and public participation are identified to understand the challenges underpinning renewable energy development and to provide a basis for improvement in Yogyakarta's governance process.

This chapter is organised into four major sections: (i) Research Findings (ii) An Evaluation of Transparency, (iii) An Evaluation of Public Participation, and (iv) Analysis of the barriers to effective transparency and the public participation process.

Transparency and public participation practices were first presented in the previous chapter. The evaluation presented here will be conducted based on indicators derived from the theoretical framework discussed in Chapter 3. The indicators that will be used to examine the levels of transparency and public participation are depicted in Table 7.1.

Table 7.1: Evaluation Indicators

TRANSPARENCY	PUBLIC PARTICIPATION
Process-based evaluation 1. Visibility 2. Usefulness 3. Communication Outcome-based evaluation 4. Trust	Process-based evaluation 1. Inclusivity 2. Quality of Deliberation Outcome-based evaluation 3. Influence on decision 4. Public education

7.2 Research Findings

This thesis investigated the extent to which transparency and public participation were evident and instrumental in the governance of renewable energy in Indonesia. In undertaking this investigation, four research questions were set as follow:

(i) To what extent is the decision-making process in the renewable energy sector transparent to stakeholders?

(ii) To what extent does the decision-making process in the renewable energy sector involve people's participation and how?

(iii) What are the challenges to effective transparency and public participation?

(iv) How can governance practice be improved to enhance renewable energy development?

An evaluation of transparency and public participation practice was conducted on renewable energy governance in Yogyakarta. The evaluation framework was established by deriving indicators from scholars such as Arnstein (1969), Beierle (1999, 2010), Drew and Nyerges (2004), Abelson and Gauvin (2006), Dietz and Stern (2008), Rauschmayer, Berghöfer, Omann, and Zikos (2009), Beierle (2010), Chompunth (2011) and Greg Michener and Bersch (2013). Conclusions were drawn based on the analysis of interviews, the researcher's observations of public meetings and participants' non-verbal responses during interviews, government official documents and the literature on renewable energy governance.

The study in Yogyakarta found that a lack of transparency and public participation in the decision-making process has adversely affected the development of renewable energy. The finding suggests that the lack of transparency has resulted in public distrust and has prevented wider involvement of the stakeholders. Meanwhile, the lack of public participation has led to poor coordination, misinformed decisions and decreasing legitimacy for government decisions.

In terms of transparency, the study found some deficiencies related with completeness and usefulness of the information. Incomplete information or the failure to make a full disclosure of information regarding the risks and negative impacts of the project during the establishment of PLTMH Semawung, has adversely affected local people's levels of trust. It has also created a negative image of the renewable energy project which can hamper the transformation toward renewable energy sources. Furthermore, the lack of meaningful information in the policy documents has inhibited the ability of private investors to make business decisions. Both deficiencies have been found to create public scepticism about the future of renewable energy development in Indonesia.

In regard to public participation, the involvement of relevant stakeholders in decision-making processes has been found to be the key element in securing public acceptance, generating

legitimacy for decisions and mobilizing support from all stakeholders. For example, effective public participation practice at the preconstruction stage of PLTH Pantai Baru has smoothed the process in securing public acceptance. The local people's hesitancy regarding renewable energy projects was eliminated through a series of public discussions where the benefits and importance of renewable energy were disseminated. Public participation has also enhanced public awareness and knowledge about renewable energy. On the other hand, the lack of public participation can affect the quality of decisions as not all relevant information is grasped by the decision makers. The misinformed decision, furthermore, can create delays in policy implementation.

In addition, it is worth highlighting that participation is required to be meaningful so that participants have the opportunity to convey their concerns as well as the power to influence the decisions. The study found that when the concerns and interests of local communities relating to land utilization and economic activities were identified and addressed by the public agencies, it eased the process of obtaining public acceptance and further engagement and support from stakeholders. As occurred in PLTH Pantai Baru, local communities were involved in managing and maintaining the solar panels and wind turbines which keep the PLTH functioning. On the other hand, the study also found instances where participation was a form of window dressing or an empty ritual. The participation process here was mainly aimed at securing public acceptance rather than at obtaining public inputs and improving the quality of decisions. In this regard, the public is provided with incomplete information particularly regarding negative impacts and risks. Such participation is manipulative and merely seeks to validate a decision that has been already made.

The study also identified three factors that determined the quality of the public participation process in Yogyakarta. These included the level of knowledge, the local culture and the genuine intention of the participatory process organizer (i.e. the government or project

developer). Broader knowledge among participants may lead to more valuable inputs, whereas limited knowledge about the issue can result in a one-way communication process that lacks meaning. Furthermore, having a long history of monarchical rule has influenced local people's attitudes toward the government. Some people still hold to the belief that questioning the Sultan's decision is taboo and disrespectful. Hence, this value has lessened the quality of the participatory process. In addition, the case in PLTMH Semawung demonstrated that the main intention of public participation here was to gain public approval rather than to obtain an insight into the concerns of the local community. Thus, the participation process was designed to disseminate information about the benefits of the project and the public facilities that would be provided after the project construction was finished. However, the developer tended to bury information about the potential disruptions that the project might cause. In this regard, the public participation process lacks sincerity, which according to Beierle (2010) is one of the elements that determines the quality of deliberation.

Renewable energy in Indonesia is currently developing at a slow pace, hence the renewable energy targets stipulated in the National Energy Policy are unlikely to be achieved. In 2018, the share of renewable energy in Indonesia reached 8.5 percent of total energy output (MEMR, 2019a) which is far below the national target, which is to achieve 23 percent in 2025.

A range of barriers that have impeded the development of renewable energy and that relate to an absence of transparency and public participation were identified throughout the study, including individual, cultural, institutional, regulatory and financial barriers. Among these barriers, institutional design was considered to constitute a major obstacle to securing effective transparency and greater participation in the governance process.

Despite being subject to a decentralised system of governance, energy affairs in Indonesia are largely dominated by the central government. The centralized or top-down nature of the policy making process and the monopolistic energy market structure have jointly had a significant impact in constraining greater transparency and wider participation.

The poor commitment from the central government to promote renewable energy development has created an environment that does not encourage stakeholders to get involved in policy-making and to develop projects of renewable energy. At the national level, the centralized approach in energy governance has maintained the status quo of an energy system that heavily relies on fossil sources. In the absence of sufficient transparency and meaningful public participation, the policy-making process in the energy sector was largely influenced by powerful economic actors from the coal industry who have strong political connections with key policy makers. This has resulted in insufficient policies and programs to support renewable energy development. The revocation of a Feed in Tariff mechanism and the new pricing policies, for example, have disincentivized the further development of renewable energy projects. By contrast, subsidies and incentives for fossil energy are continuously maintained by the central government.

In addition, the centralized approach has enabled the government to grant PLN a bigger authority in the development of renewable energy projects. Through the new regulation, PLN has the authority to assign project developers and negotiate energy prices for renewable energy. In this sense, PLN's position as the monopolistic right holder in the electricity sector is problematic as it presents a clear conflict of interest. Most of PLN's power generation is fuelled by fossil sources and it currently has a surplus of electricity supply. This condition has consequently led to renewable energy development being sidelined as PLN is struggling to increase their energy sales which is mainly sourced from coal. Hence, it is not surprising that many stakeholders question the Indonesian government's commitment to renewable energy

development. This situation has also discouraged private investors from developing renewable energy projects in Indonesia.

As a result, even though Indonesia has set ambitious targets to increase renewable energy utilization, policies in the energy sector do not support the development of renewable energy. In fact, current energy policies favour the coal industry. This has adversely affected renewable energy development at provincial levels. As this study has found, the Yogyakarta government, as in many other provinces, is highly dependent on support from the central government to develop renewable energy. This is due to limitations of resources such as knowledge, technology and finance. Additionally, most permits and licenses regarding renewable energy development are issued under the authority of central government.

This study suggests that current governance processes need to be modified. Greater transparency and public participation should be incorporated into the energy policy process to push the renewable energy agenda. The integration of both elements of integration will facilitate a bottom-up monitoring process that can hold government elites accountable over the decisions or actions taken (McIntyre-Mills & Wirawan, 2018). Furthermore, transparency and public participation have the potential to reduce the concentration of political and economic power in the energy sector, while at the same time pushing governments to make the transition towards renewable energy (M. J. Burke & Stephens, 2018).

7.3 Transparency Evaluation

Transparency is perceived to be an important ingredient of good governance. The importance of transparency to promote the transition toward renewable energy has also been acknowledged (Ferrario & Castiglioni, 2017; Jenkins, McCauley, & Warren, 2017). Therefore, an evaluation of transparency is undoubtedly necessary (da Cruz, Tavares, Marques, Jorge, & De Sousa, 2016) in order to identify weaknesses and to improve the governance of

renewable energy in Indonesia. As discussed in Chapter 3, transparency will be evaluated from the perspectives of process and outcomes by using four indicators that are adapted primarily from the work of Drew et al. (2004), Greg Michener and Bersch (2013) and Grimmelikhuijsen (2012a) and that have been identified as being relevant to the context of this study. These indicators are *visibility*, *usefulness*, communication and *trust*.

7.3.1 *Process-based Evaluation*

Three indicators will be used to evaluate transparency from the perspective of process. Two of the three indicators, namely visibility and usefulness, have been the subject of continuing research in the evaluation of transparency. Additionally, based on a review of the government communication and transparency literature (Fairbanks, Plowman, & Rawlins, 2007; Heath, 2004; Liu, Horsley, & Levenshus, 2010), this study added communication as one of the evaluation indicators. We sequentially examine visibility, usefulness, and communication in the following section.

7.3.1.1 Visibility

Visibility refers to accessibility or the extent to which the relevant information can be obtained by the public as well as the completeness of information (Greg Michener & Bersch, 2013). The study found that to some degree information is obtainable, however most information regarding the *Perda*-making process or the establishment of renewable energy projects is not easily retrieved. For example, a research report of both the *Perda* studied was not publicly released or uploaded to the official websites of the government. This type of research report is a public document which should be made available to the public as it provides information about the rationale for and the academic review of a proposed policy or regulation. In the case of *Perda* Renewable Energy, the research report can be obtained through a request by official letter.

In terms of accessibility, transparency in Yogyakarta can be considered as a passive or reactive transparency[7]. Raupp and de Pinho (2016) describe passive transparency as a condition where information is made available in response to the demands of society. In this regard, information released by the providers tends to be limited, hence impacted to the level of completeness of the information (Greg Michener & Bersch, 2013). On the other hand, Grimmelikhuijsen (2012b) argues that in this modern day of transparency, the government should focus on active transparency where the information is made available without people having to make a specific request. This is particularly because almost all government institutions have official websites which can be utilized to enhance transparency by informing the public about their plans and activities. As Welch, Hinnant, and Moon (2005) observe, transparency now is regarded as the amount of information that is provided in the official websites of government institutions. Letourneau (2016) also underscores the importance of providing information on the government websites. He stated:

> *"anyone using any kind of web browsing technology must be able to visit any site and get a full and complete understanding of the information as well as have the full and complete ability to interact with the site if that is necessary"* (Letourneau, 2016, p. 1)

Some issues regarding the completeness of information were also found which indicate its dubious nature. The accessibility can be compromised because relevant information that could influence public perspectives is not integrated as part of the document (Drew & Nyerges, 2004). This was evident in the establishment of the PLTMH Semawung project. It is suspected that information conveyed by the developer (PT. Energy Puritama) to local people was not complete, particularly regarding the potential disruptions caused by PLTMH.

[7] The term "passive" transparency has been used in the literature to refer to request-based disclosure (Gregory Michener, Coelho, & Moreira, 2021; Raupp & de Pinho, 2016). However, if one must make a formal request to obtain specific information, then transparency is not necessarily passive.

In this regard, the developer may have misled the public with regard to the renewable energy project.

Indeed, information availability does not necessarily mean that it is visible (Greg Michener & Bersch, 2013). The developer was not fully transparent in relation to all the relevant information available, particularly about negative impacts. During public hearings, the developer mainly focused on the positive impacts of the projects, while potential problems such as the closure of water access in order to conduct maintenance on the micro-hydro generator were barely mentioned. Greg Michener and Bersch (2013) refer to this transparency condition as one of "poor visibility", meaning that relevant information such as the risks of the project was hidden. As transparency is positively linked to the level of citizen's trust (Hood & Heald, 2006), the poor visibility found in PLTMH Semawung has led to a deterioration in the level of trust among local people.

Over emphasising the potential benefits of the project during public hearings was aimed at securing public acceptance. Public resistance is a common issue that arises in the development of renewable energy (Gross, 2007). This can lead to increasing costs, delays and project cancellation (A. M. González, Sandoval, Acosta, & Henao, 2016). The study of Sütterlin and Siegrist (2017) shows that generally people do not think about the shortcomings of renewables, but when negative impacts are disclosed, the level of acceptance can diminish. Thus, it is imperative for the developer to gain public acceptance particularly when the establishment of the project may interrupt the daily life of a local community.

7.3.1.2 Usefulness or Meaningful information

Meaningful information means that the information provided is useful in terms of improving awareness or knowledge and in helping to assist stakeholders to make decisions which Fung (2013) terms as actionable. It is one of the values that shows whether the provided

information is understandable, relevant and useful for the recipients (Hosseini et al., 2018; Greg Michener & Bersch, 2013).

Reflecting the literature, in this thesis I argue that levels of transparency in renewable energy governance have been adversely affected by a lack of meaningful information. In *Perda* Renewable Energy, for example, much of the important information required for the transition towards renewable energy was not arranged within the *Perda* process. Missing information includes development targets, cooperation mechanisms, incentive instruments, potential sites and future projects. This information is perceived as crucial by private industry as it determines their business plan. Without this information, it is unlikely that the private sector will invest their money in renewable energy sector (Byrnes & Brown, 2015). Ironically, the Indonesian government expects that the private sector should become the main agent in improving renewable energy utilization in Indonesia.

Meaningful means recipients are able to use the information to take actions or to make informed decisions based upon it (Fung, 2013; Hosseini et al., 2018). Similarly, Harrison et al. (2012) argue that the recipients of information need to find something valuable and important within it, otherwise transparency becomes an empty concept and public cynicism grows. In this regard, *Perda* Renewable Energy is perceived to lack the level of transparency that can propel a transition toward renewable energy.

The lack of meaningful information was also evident in the planning and management of PLTH Pantai Baru and PLTH Semawung. This evaluation took place after projects became operational. In PLTH Pantai Baru, the operator revealed that there was a failure to provide information after the management of PLTH was transferred from the district government to the provincial government. This was particularly the case with respect to information about the operational funding and development plan of PLTH. Similar conditions also emerged in the case of PLTMH Semawung where the private developer who is also the operator became

detached from local communities after the project commenced. As a result, this has created negative perceptions toward the project and diminished levels of public trust in the institutions.

7.3.1.3 Communication

The concept of transparency can be defined as the increased flow of information (Gupta, 2014; Holzner & Holzner, 2006). Hence, transparency is associated with the quality of communication during the *Perda*-making process and the establishment of renewable energy projects. As Fombrun and Rindova (2000) observe, communication is the primary mechanism for achieving transparency. This study found that communication and the exchange of information were evident in the *Perda*-making process and in the establishment of renewable energy projects. However, the quality of communication decreased over time.

In the *Perda*-making process, communication between stakeholders was evident from the initial stage of the formulation process as preliminary talks had been held between the executive and the legislative branch, the two key actors in the regulation making process. This preliminary exchange allowed both parties to gain an understanding of the background, scope and objectives of a policy plan and to identify concerns at the initial stage. Furthermore, communication with other stakeholders, such as experts from Gadjah Mada University and Atmajaya University and Walhi, an environmental NGO, were also evident in the consultation meetings. Communication among stakeholders can be considered to be a two-way process. The meeting reports noted that the executive and legislature were quite open about data and to suggestions from experts, NGOs and business associations. On the other hand, the government was able to obtain knowledge of participant's concerns and suggestions during the consultation meetings. Beierle and Konisky (1999) argue that two-way information flow is important not only to improve decisions but also to improve public trust toward the institutions.

Similarly, an early communication process was also evident in the development of PLTH Pantai Baru and PLTMH Semawung. The developers from the government and private sector actively approached local people to consult with them about the establishment plan of the renewable power plant. This was done through public forums and by inviting local leaders and community groups such as those representing farmers and fishermen to share their perspectives. It allowed for issues such as land utilization and the social economic impacts on local people to be identified and addressed at the initial stage.

However, in PLTH Pantai Baru, the level of communication was found to have deteriorated after management responsibility was transferred from the district government to the provincial government. The main reason is that the provincial government was no longer interested in further developing the PLTH Pantai Baru as the area had been provided with power access from the PLN network. This situation has adversely affected communication between the provincial government and the operator of PLTH Pantai Baru. After the management transfer, there was no communication with the PLTH operator about the current condition and future plan of PLTH Pantai Baru.

This lack of communication can result in a misunderstanding of the actual problem and lead to poor decisions. This has been demonstrated in the case of PLTH Pantai Baru where the budget for PLTH Pantai Baru was cut by more than half after the management was transferred. The resultant lack of knowledge about renewable energy and the minimal discussions held with the operator have resulted in poor decisions. An example is the reduction of the maintenance budget which has adversely affected the overall condition of PLTH Pantai Baru.

7.3.2 Outcome-based perspective

This section focuses on the evaluation of the outcomes of transparency processes. As discussed in Chapter 2, transparency is perceived to have many important impacts on the

governance process. These include improving decision legitimacy (De Fine Licht et al., 2014), reducing corruption (Bertot et al., 2012; Kolstad & Wiig, 2009), encouraging collective action (Florini, 1999) and promoting trust (Grimmelikhuijsen, 2012b; Hood & Heald, 2006; Jang et al., 2014).

Rather than reviewing all of the outcomes or impacts of transparency, this study focuses on the evaluation of the most common impact discussed in the transparency and governance literature, namely trust. Moreover, data from the fieldwork indicates that transparency has influenced the level of public trust. Other outcomes such as legitimacy, diminished levels of corruption and encouraging collective action will be expected to take a longer span of time to become visible, given the fact that *Perda* Renewable Energy was enacted only recently in December 2018 and that *Perda* RUED is still in progress as of January 2020.

7.3.2.1 Trust

The importance of transparency for building trust has been widely acknowledged in the literature (Grimmelikhuijsen et al., 2013). This section explores the extent to which the provision of information has affected the level of public trust in renewable energy governance.

Through observation and interviews, this study has disclosed some deficiencies in transparency which have adversely affected the level of trust among the stakeholders. In the case of PLTMH Semawung, the information provided by the developer was both unreliable and incomplete. This unreliability arises from the fact that the project developers did not fulfil their promise to provide public facilities such as paved-roads, street lighting, and free electricity for surrounding households. As stated by a resident:

"The reality is no promises were realized at all" (Interview with Author 2018)

In regard to incompleteness of information, the developer had not fully disclosed information regarding the risks and impacts of the micro hydro power plant. One of the impacts was the

closure of the irrigation system which denied people access to water for three months due to need to carry out maintenance.

Both unreliable statements and incomplete information have resulted in mistrust and negative perceptions of renewable energy projects. Hosseini et al. (2018) argue that while the availability of information is important, providers should also seek to ensure the quality of information, which, among others, can be done by disclosing all relevant information. This is because the disclosure of certain information can obstruct the objective of transparency as it can be obfuscating rather than enlightening (Rawlins, 2008).

Additionally, in the case of *Perda* Renewable Energy, the absence of renewable energy targets, roadmaps and strategies to develop renewable energy in Yogyakarta has reduced the level of trust or confidence that private energy industries have in the government's commitment. According to Fung (2013), this condition degrades the quality of transparency as the information provided does not have the element of actionability. In this regard, the existing regulation or policy plans lack the necessary information that can help the private sector when making investment decisions about renewable energy sector.

7.4 Public Participation Evaluation

Besides transparency, public participation is also seen to be a key element for improving the governance process (Armeni, 2016) and for facilitating the transition to renewable energy (Haggett, 2008; Steg et al., 2015). Hence, it is important to investigate the extent to which the public had the opportunity to participate in renewable energy governance. This investigation is important in order to identify deficiencies in public participation practice and to thereby provide a basis for enhancing governance processes within renewable energy. As discussed in Chapter 3, public participation will be evaluated from the perspectives of process and outcome.

7.4.1 *Process-based perspective*

In the public participation context, process is regarded as the characteristic of means that define the success of the public participation program (Chess & Purcell, 1999). Derived from the literature on public participation evaluation, two indicators, namely inclusivity and the quality of deliberation are utilized. Inclusivity is perceived to be the essential ingredient of the public participation process and is commonly used in studies of public participation evaluation, such as those by Laurian and Shaw (2009), Dietz and Stern (2008), Rowe and Frewer (2004), and Abelson and Gauvin (2006). Furthermore, the quality of deliberation has been used by Beierle (2010) specifically to evaluate public participation processes in environmental decision making. Beierle (2010) found that the quality of deliberation is highly related to the success of the public participation process since it focuses on the quality of interaction among participants. Hence, both indicators are important as well as relevant for examining public participation processes.

7.4.1.1 Inclusivity

For the purpose of this study, inclusivity or adequate representation refers to the involvement of all relevant stakeholders including all government levels, the affected ones and those who are interested in the issue (Stewart & Sinclair, 2007). Inclusivity is particularly relevant for this study as the transition towards renewable energy development requires collective action from all the stakeholders.

The study findings indicate that inclusivity has affected the quality as well as the legitimacy of the decisions being made. The involvement of all relevant stakeholders allows for access to diverse knowledge, interests and concerns. Hence, it can lead to the most informed and well-considered decision (O'Faircheallaigh, 2010). As a result, the implementation of decisions can run smoothly as the decision is supported by the stakeholders. On the other

hand, the lack of inclusivity leads to poor cooperation from stakeholders who were excluded during the decision-making process

In the establishment of PLTH Pantai Baru and PLTMH Semawung, the study found the involvement of stakeholders from diverse groups. This includes provincial government, provincial legislative branch, central government, NGOs, private sector, experts, universities and local people. The involvement of diverse stakeholders has produced relevant inputs and revealed multiple interests during the public participation process. This is consistent with the study of Valkenburg and Cotella (2016), which argues that inclusivity is an important element of governance in order to be able to deal with the complex sociotechnical nature of the energy transition issue.

In the *Perda*-making process similarly, this study found that a range of stakeholders and diverse groups were involved in the policy process. These included provincial government, legislators, NGOs, the private sector and experts from universities. From the meeting reports, the consultation meetings mainly discussed substantive topics such as technical and legal aspects of developing renewable energy. However, local communities' involvement during consultation meetings in the *Perda*-making process was barely visible. The lack of local community involvement in the *Perda*-making process can adversely affect the quality of the decisions or policy generated as the resultant failure to address local people's concerns can delay the implementation process. Bidwell (2016) underlines the fact that inclusivity is a necessary element in the participation process since it enables participants to bring their values and preferences to the decision-making table, to better align decisions with social preferences and to balance concerns among diverse stakeholders.

The process of data collection conducted during this study also revealed a lack of inclusivity at the national level. This concern was conveyed by officials from the provincial government during interviews. They argued that the provincial government played a limited role during

the formulation of the National Energy Plan (*Rencana Umum Energy Nasional* or RUEN and suspected that the decisions made regarding the renewable energy plan were more politically-driven as opposed to scientifically based. This is consistent with Marquardt (2014) finding that the limited involvement of provincial governments in formulating renewables policies in Indonesia has hampered policy implementation at the provincial level.

It has been argued that the inclusion of provincial government is an effective element in accelerating the transformation of energy systems toward renewables. Jones (2009) notes that the engagement of sub-national government is necessary to establish comprehensive and coherent energy policies at the national and subnational levels. I argue that this is also the case in Indonesia. Central government has not comprehensively acknowledged the potential of and concerns regarding renewable energy development at provincial levels due to the lack of involvement of provincial governments during the formulation of National Energy Policy or RUEN.

7.4.1.2 The quality of deliberation

The quality of deliberation is regarded as being the quality of participant's arguments, the ability to question claims and assumptions, the sincerity or honesty of all stakeholders and comprehension (Beierle, 2010, p. 52). This study suggests that the quality of the public participation process in Yogyakarta has been influenced by a number of factors, such as the level of knowledge or education, the local culture and the intention or sincerity of participants.

The quality of deliberation in the *Perda*-making process was determined mainly by participant's knowledge about the problem. The participants in consultation meetings were academics or experts from universities, energy business associations and NGOs who have substantial experience in renewable energy. With knowledge and experience, this group of participants has provided valuable inputs for the government, for example, forecasting

models of energy supply and demand, social-economic impacts, potential markets and legal implications.

However, the situation is quite different when we examine the establishment of the two renewable energy projects. The quality of deliberation was rather poor. Public participation processes tended to be a process of socialization by the government about its programs, a one-way communication process. Moreover, local people barely understood the consequences of decisions, particularly the negative impacts caused by the projects. This can be mainly attributed to the limited knowledge of rural communities about renewable energy. As Beierle and Konisky (1999) argue, knowledge is a critical factor in enabling people to identify shortcomings, to apply community pressure and to contribute to the policy making process. Therefore, a well-educated society plays an important role in improving the quality of the public participation process.

In this thesis I also argue that the quality of deliberation is influenced by the culture of the local people. This is true in the case of PLMTH Semawung where the local culture was found to encourage one way communication and to thereby diminish the ability of local people to question claims made by the developer or government. As discussed in Chapter 5, one of the unique characteristics of Yogyakartan people is '*ewuh pakewuh*' which is a sense of shyness, respectfulness and/or reticence to others which stems from the latter's social position, seniority or power (Wati, 2014). This behaviour has been shaped by a long history of monarchical government in Yogyakarta, a history which continues to this day. Some people, particularly the elderly and those living in rural communities, still hold to traditional values in which questioning the Sultan's decision is considered to be taboo. As the government is seen to be an extension of the Sultan's authority, local people tend to have positive thoughts about the project and to accept the claims and decisions made on its behalf. PLTMH Semawung, although it is owned by the private sector, has obtained permission from

the district government and the Sultan. Moreover, public consultation involving the developer and the local community was facilitated by the district government. Thus, the public participation process went smoothly without encountering significant obstacles or resistance.

Another factor that adversely affects the quality of deliberation is the lack of sincerity in PLTMH Semawung. Kies (2010) states that the term sincerity refers to the openness of relevant information and the presence of true intentions regarding the interests of stakeholders which in this case is the developer. Issues regarding sincerity have emerged because the developer tended to avoid disclosing information about potential disruptions caused by the PLTMH project. An example is the three month closure of the irrigation system due to the need for mechanical maintenance, which caused the cessation of water access for local communities.

The lack of sincerity has also adversely affected people's perception of the energy transition. People felt that they were misinformed and being kept in the dark about the closure of the irrigation system that significantly disturbed their life. As PLTMH Semawung has negatively impacted on the environment and the lives of people in local communities, so too has people's trust in agencies been eroded. As a result, local people prefer to maintain the status-quo, the conventional energy system which is based on coal.

Having said that, I argue that the public participation allowed in Semawung is mainly aimed at securing public acceptance of the project rather than at obtaining public inputs in order to improve the quality of decisions. In this regard, the public is seen as a barrier. The society is perceived as being irrational and emotional rather than as a source of values and knowledge (Wynne, 1996). Armeni (2016) argue that this participation model focuses on validating decisions that have already been made, rather than upon facilitating a consensus-based public discussion. This model is the opposite of a 'real' participation model in which the public is provided with complete information including information about the project's impacts and

risks, so that all stakeholders can engage on the same level of playing field (Beierle & Konisky, 1999).

Furthermore, Armeni (2016) argues that a “public acceptance” model has already pre-framed the way the developer wants the public see the project plan. The reason why this participation model is adopted is because it minimises the risk of public resistance to the project arising, something which often occurs when the project adversely affects people’s daily lives. PLTMH project in Aceh, for example, has encountered protests since it led to a deterioration in the water quality of the river which in turn led to the project’s suspension (Bulkainisah, 2018).

The effect of a participation process that only focuses on public acceptance is found to be significant in shaping people’s perceptions of the energy transition. Local people seem to become apathetic about the energy transition to renewables, to distrust agencies and to prefer to maintain status quo particularly when they cannot see the direct benefits of renewable energy to their social and economic life. The impacts of public participation will be further discussed in the next section which will evaluate public participation in terms of its outcomes.

7.4.2 *Outcome-based perspective*

This part aims to evaluate public participation based on its outcomes or impacts. In doing so, the evaluation will focus on three outcomes: influence on decisions, trust and relationships and public education.

7.4.2.1 Public education

Another purpose of public participation is to educate the participants. Using the social aspect to evaluate public participation, Beierle (1999) argues that public participation needs to be facilitated by the transfer of sufficient knowledge to participants to enable them to deliberate on issues and to discuss alternatives with governments and experts. This can lead to long-

term collaboration with other stakeholders as the participants have been equipped with sufficient knowledge (Pretty & Shah, 1997). In this regard, this section will explore whether the public participation process has improved participants' knowledge and awareness. Furthermore, the empowerment of local communities can also be considered to be a positive outcome from the process of education that occurs when the public is able to participate.

In the *Perda*-making process, there is no evidence that public participation has improved the level of knowledge or awareness of local communities. This is because the evidence of the meeting reports shows that they were not involved in the formulation of *Perda*. Participation in such meetings was limited to professionals, experts and NGOs who have knowledge of certain aspects of renewable energy. Although, an official from the legislative office claimed that local communities were involved in public hearings held by the parliamentary office, there is no documented evidence about the holding of the public hearing.

In the establishment of renewable energy projects, knowledge transfer was evident both in PLTH Pantai Baru and PLTMH Semawung. Coming with almost zero knowledge about renewable energy, the public participation process has transformed the situation of local people by enabling them to be informed about the issue. Blenkinsopp, Coles, and Kirwan (2013) argue that in a situation where local people lack knowledge of the issues, public education is imperative to create positive perceptions and to sustain good relationships among stakeholders. Public education in Pantai Baru and Semawung was done through public meetings that involved local communities and local figures. In line with the theory of Beierle (1999), to some extent public education has increased transparency and public trust. Therefore, both projects managed to gain public acceptance and the renewable energy power plants in both instances were constructed without encountering any noticeable obstacles.

Furthermore, in the case of PLTH Pantai Baru, public education has sustained the relationship between the developers and local people. To date, local people are still engaged in operating the renewable energy power plant. This outcome is consistent with the study of Pretty and Shah (1997), which found that the involvement of local people in the planning and implementation stages has effectively built long-term relationships that are interactive and empowering.

7.4.2.2 Influence on decisions

Public participation is essentially a process that enables power sharing, hence stakeholders have an influence over the decision (World Bank, 1996). In the absence of the power to affect the decision, the process is considered to be one of *"non-participation"* or just an empty ritual (Arnstein, 1969). Thus, it is relevant to evaluate public participation in terms of the influence it has on outcomes.

Based on Arnstein's ladder of participation, this study suggests that the degree of participation in Yogyakarta's renewable energy governance lies between non-participation and tokenism. This means that the decision-making processes are still dominated by the authorities, in this case the government or the project developers. By contrast, the public has limited power to influence the outcomes of the policy.

Public participation in the *Perda*-making process can be categorized to be at the "consultation" level. The consultation level is part of the second degree of participation, 'tokenism', which is the 'mid-level' of participation between the ideal condition and the lowest degree of participation (Arnstein, 1969). Participation here is characterized by the inability of the participant to push their agenda or to influence the outcomes despite having their voices conveyed through the official participation forum. This claim is based on the fact that *Perda* Renewable Energy has failed to integrate strategic inputs such as development mechanisms, incentives and arrangements of renewable energy utilization in transportation, business and

industry sectors. Thus, the participation process becomes less meaningful, it acts only as window dressing to obtain legitimacy for the decisions being made (Monno & Khakee, 2012).

The failure to integrate important inputs from participants into the *Perda* also can be attributed to the limited scope of authority of the agency itself or the provincial government. This is inseparable from the monopolistic nature of energy distribution in Indonesia. For example, an expert from Gadjah Mada University revealed that the provincial government's effort to push the utilization of biofuel largely depends on the State-owned Enterprise (SOE) authorized as fuel distributor which is Pertamina. Furthermore, PLN, the state electricity company, holds monopoly rights over the distribution and transmission of electricity in Indonesia. On the other hand, both SOEs have conflicting interests as their core business is mainly fossil based energy.

In the establishment of PLTH Pantai Baru, I argue that the degree of participation was higher than in the *Perda*-making process. This can be seen from the operationalisation of PLTMH Pantai Baru, since its design was based on the local communities' needs and brought economic benefits for them. The developers also addressed public concerns by allowing local people to utilize idle land around the area where the wind turbines were located. Furthermore, the participation process was further strengthened by the training and empowerment of local people as the operators of PLTH Pantai Baru.

It is evident that participants already began to have some degree of influence over the decision in the case of PLTH Pantai Baru. Thus, I argue that the participation process in this case is at the level of what Arnstein (1969) labelled "*placation*". In terms of the degree of participation, placation is one level higher than the "*consultation*" level which is found in the *Perda*-making process, but both still represent tokenistic forms of participation. In this level of participation, participants are able to exercise influence over the decisions that are made

during the participation process. However, their power remains limited as the power holder retains the right to decide the legitimacy or feasibility of the participant's inputs.

In PLTMH Semawung, the participation process conducted during the establishment phase can be considered to be one of "*manipulation"* or *"non-participation"* (Arnstein, 1969). This is the lowest degree of participation where the objective of a participatory process is not to enable the public to participate but rather to educate people or to change their perceptions. The claim of "manipulation" is based on the assumption that the participation processes were aimed at securing public acceptance rather than at gathering inputs. During a public hearing, the project developer conveyed that together with the construction of PLTMH, the developer will provide the local neighbourhood with a paved-road and street lights. However, a few years after the PLTMH was established, none of the facilities had been provided. As revealed by one of the local people:

> *"There is no streetlight provided by PLTMH Semawung. Road access is still the same as before, still no changes"* (Interview with Author 2018)

In this sense, developer sees the public as being a barrier that can hamper the project. Hence, the public hearing was utilized as a mechanism to shape public perceptions by emphasising the benefits of PLTMH Semawung being established, while the potential risks and adverse consequences were not fully disclosed.

It is evident that the nature of public participation in renewable energy development is complex and ambiguous. Public participation is required not only because the regulations mandate that it occur or to ensure legitimacy from the public. Rather, in many cases, public participation can help the agencies to improve quality of their decisions and to support effective implementation (Dietz & Stern, 2008). Therefore, the public participation process needs to allow the public to have control over decision making so that decisions makers are able to reach consensus based on a collaborative process (O'Faircheallaigh, 2010). As

Arnstein (1969, p. 216) observed *"there is a critical difference between going through the empty ritual of participation and having the real power needed to affect the outcome of the process".*

Having evaluated transparency and public participation, it is clear that the effective implementation of transparency and public participation is subject to the influence of numerous factors. The next section will further elaborate upon the obstacles that it can encounter.

7.5 Barriers to Effective Transparency and Public Participation Practice

Some barriers to effective transparency and public participation in renewable energy governance have been identified during the evaluation process. This section aims to highlight those barriers. Adapting from the work of Diduck and Sinclair (2002) and Petts (2003), the study will locate the barriers in four categories, namely: individual, cultural, institutional and regulatory barriers.

7.5.1 Individual Barriers

Education and Knowledge

It is important to improve the level of education and knowledge particularly about renewable energy among all stakeholders. Zakaria, Basri, Kamarudin, and Majid (2019) claim that public education plays an important role in facilitating the transition to renewable energy. In terms of the governance process, awareness and sufficient knowledge can improve the quality of the public participation process and of the decisions that are made in the environmental policy process (Beierle & Konisky, 1999). Knowledge has a two-way relationship with the quality of the governance process. On the one hand, transparency and public participation can

enhance participant's knowledge, while on the other hand, knowledge can improve the quality of transparency and of the public participation process. This section will focus on the latter.

Although Yogyakarta is known as a "student city" in which many reputable schools and universities are located, the rural areas present us with a contrasting condition. For example, in the sub-district of Srandakan where PLTH Pantai Baru is located, only 7.5 percent of the population have an education at university level while 27 percent have less than primary school level[8]. Rural areas are often targeted as sites for renewable energy projects. The main reason is that rural areas usually have the extensive idle space that is required for renewable energy projects as was the case for Pantai Baru and Semawung.

The study has indicated that education level and knowledge have affected the quality of the deliberative processes in renewable energy governance. This is in line with the theory of Beierle and Konisky (1999) that limited knowledge can hamper the effectiveness of governance processes and outcomes as it does not permit widespread discussion to occur during the public participation process. In this sense, public participation processes in the development of renewable energy projects in Yogyakarta tended to involve one-way communication. The developer explained to local communities about the development plan and extensively highlighted the potential benefits, while failing to highlight the potential negative impacts. This has driven the public to accept the project without having an awareness of all the potential risks that it may have to face in the future.

Another challenge can arise from people's negative perceptions of renewable energy. Stigka, Paravantis, and Mihalakakou (2014) claim that rural communities have had negative experiences of the construction of renewable energy projects. This is also the case in Yogyakarta. At the early stage of the consultation process, people were apathetic about the

[8] Interactive data available at https://kependudukan.jogjaprov.go.id/. Accessed on 25 May 2020.

project. This is because they understood the failures and disruptions of renewable energy projects that had occurred in other regions such as the loss of agricultural lands or the disruption of water access. Without sufficient information to educate people, these negative assumptions regarding renewable energy project could generate public resistance.

To improve levels of knowledge, Acikgoz (2011) argues that public education can be done through formal and informal approaches. Formal education can be done through the integration of renewable energy knowledge into curricula, while informal education can be done through massive renewable energy campaigns for a better future.

Unfortunately, the use of both formal and informal ways to convey information regarding renewable energy is still minimal. In terms of the formal method, sustainable development is not a common subject taught in schools or universities in Indonesia. Knowledge regarding sustainable development and renewable energy is limited to people with good access to information such as university students or urban residents, whereas access to such information in rural areas is limited. In terms of the informal method of information dissemination, the government's campaign regarding renewable energy is still insufficient. This information is often overshadowed by the promotion of increased fossil energy consumption as there is currently an oversupply in electricity production which is mainly sourced from coal (Kumparan, 2018).

Low economic status

Poor economic conditions have also been found to form a barrier to effective governance processes. Claeys, Coussee, Heiden, Merckaert, and De Grande (2001) argue that difficult economic conditions often prevent the poor from participating in policy processes as they are overwhelmed by more pressing problems in their lives.

Yogyakarta. BPS Yogyakarta (2019b) notes that most people who live in rural areas in Yogyakarta are still struggling to fulfil their basic needs such as food, housing and access to energy. This has also affected people's attitudes toward the sustainable energy option by encouraging ignorance about sustainability or renewable energy issues. Based on interviews, some NGOs in Yogyakarta also revealed that people in low-income areas tend be unaware of both environmental issues and renewable energy as these issues are of no concern to them.

7.5.2 Cultural Barriers

Local values and beliefs

As discussed in Chapter 5, Yogyakarta is the only province in Indonesia that is led by a king or 'Sultan' who also acts as the governor. The long history of monarchical rule along with traditional values and culture has shaped the behaviour and relationships between the governed and the government.

Being subject to monarchical rule, most people, particularly those living in rural communities, feel a sense of inferiority when they interact with powerful people, including the officials who they perceive as being the representatives of their Sultan. Local people believe that the Sultan will act for the greatest benefit of the people. To date, many people in rural areas use the Sultan's land for farming or to run their livestock. Hence, people are reluctant to challenge the claims or decisions made by the authorities. Arguably, this has affected the quality of deliberation in policy making processes in Yogyakarta.

In addition, within the monarchy system, the Sultan has absolute control over the policy agenda and process at the provincial level. The 'check and balance' role of the legislature (DPRD) has become largely ineffective as no one wants to engage in a conflict with the Sultan or to defy his authority.

Sultan's commitment toward renewable energy

The Sultan is a highly respected figure in Yogyakarta. Many argued that Sultan Hamengkubowono X, who is the current governor of Yogyakarta, is a pro-environmentalist. This claim has been made by government officials, experts from the university and NGOs. However, this has not been demonstrated by actual events. For example, PLTH Pantai Baru which is currently under the management of the provincial government is now in poor condition due to a lack of financial support for maintenance and further development. The document from the Finance Bureau of Yogyakarta has also shown that the budget for developing renewable energy has decreased overtime. Other evidence is provided by the cancellation of the Samas Wind Farm Project. One of the staff from UPC Renewables, the private energy company/the project developer, claimed that the cancellation could largely be attributed to the fact that the land acquisition permit was not approved by the Sultan. However, the reason behind the rejection was not explained by the staff member.

Furthermore, the Sultan's alleged commitment to renewable energy development is not reflected in the existing regulatory framework in Yogyakarta. *Perda* Renewable Energy, the most recent regulation which is also expected to be the catalyst of renewable energy development in Yogyakarta, has failed to set out a renewable energy development roadmap as well as to arrange for mechanisms and incentives to encourage participation from wider stakeholders.

7.5.3 Institutional Barriers

Institutional barriers have become a major impediment to renewable energy development in Indonesia. Study findings indicate that institutional barriers can trigger other barriers such as a lack of supportive policies and programs, a lack of campaign or public education to improve awareness of renewable energy, overlapping regulations and limited financing sources. The

institutional barriers include a lack of commitment, centralized governance processes, a monopolistic energy market and tough competition from fossil energy.

Lack of commitment

The lack of commitment is the major barrier to the development of renewable energy in Indonesia. Lack of commitment occurs when the government commits itself to certain actions but later reneges on that commitment (Decker, 2014). An indicator of poor commitment in Indonesia' renewable energy sectors is the frequent changing of regulations. This is particularly true at the central government level. The revision of regulations was often completed without sufficient involvement from non-government actors. From the private sector perspective, the revised regulations have reduced the incentives to develop renewable energy industries and this has led to complaints from the private sector. Arguably, this condition indicates a lack of commitment to renewable energy development.

Overlapping regulation in the energy sector also indicates a lack of commitment. In this respect, there is another regulation that undermines policies regarding renewable energy promotion. The most current example is the enactment of a law regarding coal and minerals in May 2020, in the middle of the COVID19 pandemic. The new regulation facilitates the ease of doing business in the coal sector which can lead to over exploitation as well as to environmental deterioration. On the other hand, incentives in the renewable energy sector are gradually being drained, for example the elimination of the Feed in Tariff (FiT) mechanism which demonstrated the government's partiality towards the coal industry. In an interview, a CEO from an international energy company was reluctant to invest money in Indonesia's renewable energy sector due to the government's inconsistency (Interview with author, 2018). This study confirms Decker (2014, pp. 191-192) finding that inconsistency affects the actions and decisions of firms who base their decisions on government policy and actions.

The lack of commitment can also be found at provincial level. An example is the inadequate fiscal incentives in *Perda* Renewable Energy. As a core renewable energy policy at provincial level, this *Perda* has failed to provide meaningful information as well as incentives that can promote renewable energy utilisation in Yogyakarta. The lack of commitment is also evident in the decreased budget for renewable energy development and in the lack of concern for PLTH Pantai Baru which actually has a big potential for both providing energy and for improving the socio-economic condition of local people who live in relative poverty.

Furthermore, it is argued that in taking a political stance regarding renewable energy development, sub-national governments (provincial and district) tend to follow the lead of the central government and thereby to reflect its level of commitment. In other words, if the central government's policy is simply rhetorical, then policy execution at the sub-local level is likely to be frivolous.

Heavily centralized process

Further contributing towards the lack of commitment to renewable energy development is the adoption of a centralized approach in the energy sector. Policy formulation at central level tends to be driven by powerful political and economic groups, particularly from the fossil energy and coal industries. As a result, government policy tends to favour the fossil energy industries. The development of renewable energy in Indonesia has consequently been painfully slow, particularly in view of its potential as a source of energy and the pledges of commitment that it has received from government.

Despite past attempts to formally decentralize governance to distribute responsibilities, policy-making processes in Yogyakarta are still dominated by the central government in many areas. In the education sector, central government remains the dominant actor in the area of sub-national educational affairs. Based on the regulations (Law No. 23/2014, Law No. 32/2004, and Government Regulation No. 38/2007), the responsibilities of central

government in the education sector, among others, include formulating national policy and strategic planning, the accreditation of higher education, high school, junior high school, elementary school, pre-school and non-formal education and the rotation of teachers and non-teacher staffs of inter-provinces. This suggests that the supposedly decentralized governance system is not operating as it should, since the central government still holds significant powers and remains the dominant policy actor. Furthermore, the domination of central government is seen in the formulation of school curricula. Sijabat (2015) notes that even after decentralization, curriculum development, including the objectives, content, learning methods and techniques of learning assessment, remains under the authority of the central Ministry of Education, while individual schools' role is still limited. In addition, Purwanto and Pramusinto (2018) assert that the central government has the largest share of the education budget as it still holds significant responsibilities in the education sector, including for strategic policy management, operational policies and program management.

Likewise, decentralization in the health sector remains limited. For example, although local government is allowed to take the initiative on health care policy, approval from central government is still required. Hidayat (2016) argues that the assumption of such joint responsibility in health care planning and implementation is widely seen as an attempt by the central government to recentralise power. This is because joint responsibility provides an opportunity for central government to interfere with local planning and to enforce its agenda, particularly when differences in perception arise. As a result, local governments are now demanding more powers and trust from the central government in order to improve their public services and to align them with local needs. Hidayat (2016) adds that inadequate communication at various levels has caused tensions and undermined the effectiveness of decentralisation in the health sector.

Similarly, in the energy sector, while horizontal coordination at provincial level can be considered to be working reasonably well, vertical coordination between central and provincial governments is problematic. The study findings suggest that a top-down process and marginalisation of the province's role is a major cause of poor vertical coordination. Provinces still have limited authority in managing energy affairs. Indonesia's energy sector is mainly under the control of the Ministry of Energy and Mineral Resources (MEMR) which has the authority to shape and regulate national energy policy and to control the State Electricity Company (PLN), which is the only institution responsible for energy distribution and transmission in the country. Hence, provincial governments require "approval" from both MEMR and PLN in order to be able to effectively develop renewable energy.

Officials of Yogyakarta province argued there was insufficient coordination between central and provincial governments. The lack of transparency and public participation in the formulation of National Energy Policy (RUEN) has resulted in poor policy outcomes. Renewable energy targets in National Energy Policy (RUEN) are perceived by provincial government as being overly ambitious. Thus, many provinces face difficulties in integrating RUEN into their RUED. This has delayed policy implementation. By November 2019, only five out of 34 provinces had launched RUED which was actually due on March 2018.

This centralized process has caused a gap in perception and information among government levels. While the central government assumed RUEN is achievable, the provincial government argued that the renewable energy targets are overly optimistic given the limited resources possessed by most provinces. The findings of this study support Marquardt (2014) claim that the adoption of a centralized approach in Indonesia's energy governance has resulted in misunderstandings about local circumstances among policy makers at the state level. As one of the officials from Department of Energy Yogyakarta observed:

"The formulation of RUEN was without our involvement. The renewable energy targets on RUEN were set by the central government… And we, the local governments are required to follow the targets… Central Government should talk to us first about the renewable energy targets because we know better about the condition and the character of our region." (Interview with author 2018)

The centralized approach found in the energy sector has also caused cascading effects in triggering other barriers such as a lack of clear and detailed regulations, overlapping regulations, lack of financing support and incentives and a lack of transparency and public participation in the decision-making process for developing renewable energy. This has become a great challenge for Indonesia in seeking an effective governance model that can promote transparency and public participation to push the renewable energy agenda at all government levels.

The monopolistic electricity market

Challenges in advancing renewable energy also arise from the fact that PLN is the main agent for energy transformation in Indonesia. As the main producer and the sole distributor of electricity in Indonesia, PLN has been perceived as being supportive of non-renewable energy power generation (Setyowati, 2019). PLN mostly relies on coal as an energy source and plans to continue to do so.

The continuous reliance on coal is reflected in PLN's latest business plan known as Indonesia Electricity Supply Business Plan or *Rencana Usaha Penyediaan Tenaga Listrik* (RUPTL) 2018 – 2027. In the RUPTL, PLN still focuses on developing coal to expand the capacity of power generation. By the end of 2025, PLN targets that 54.4 percent of Indonesia's power supply should be sourced from coal (MEMR, 2019b). On the other hand, the RUPTL overlooks the potential for renewable energy development. For example, solar as the most competitive energy source on the Asian energy market has been neglected and has been curtailed by 13 percent in the RUPTL (M. Brown & Hamdi, 2019).

The transition towards renewable energy sources is also impeded by the fact that PLN is currently experiencing a power oversupply which is essentially sourced from coal. This oversupply has made PLN resistant to the proposal to convert from reliance on coal to renewable sources. PLN's resistance to renewable energy was conveyed by a member of the Indonesian Renewable Energy Society (METI). He argued:

"A massive development of renewable energy can be a problem for PLN. Imagine what will happen to PLN, its potential market will decrease... The power generated is not absorbed by the market or customers" (Interview with author 2018)

The impact of PLN oversupply was also asserted by the Director General of EBTKE, MEMR. He added:

"Of course it (renewable energy program) will cause resistance from PLN, particularly because of the oversupply condition. PLN would not care with renewable energy, the most important thing for PLN is their cash flow... PLN is bound by a law which stated that state-owned enterprises must profit." (Interview with author 2018)

PLN is a state-owned company which by law must have as its main mission the making of profit. Thus, PLN is compelled to sell the electricity surplus in order to avoid a business loss. In this case, the profit is generated from energy sales which are mainly sourced from coal. PLN even encouraged the community to increase its energy consumption to improve their sales (Hamdi, 2017) and offered tariff discounts for consumers (JawaPos.com, 2019). PLN's response to its oversupply condition contradicts the spirit of improving energy conservation and renewable energy in order to reduce emissions from fossil energy combustion.

The position of PLN on renewable energy development has become more powerful. In the latest regulation of the Minister of Energy and Mineral Resource number 50 of 2017 concerning the utilization of renewable energy sources for electricity supply, the government granted more authority to PLN. This authority includes the right to select the project developer which was previously done by tender process. This means that independent energy

producers are required to follow PLN's terms in order to secure the projects, including those concerning the price of renewable energy. It is likely that PLN will only buy renewable energy if the price is lower than fossil-based energy, the main energy source of PLN's business which currently experiencing an over-supply condition. This has weakened the position of the Independent Power Producer (IPP) or private energy company as the energy price from renewable sources can be pushed lower than fossil based-energy. As a result, many investors stalled or cancelled their projects due to the new arrangements.

Maulidia, Dargusch, Ashworth, and Ardiansyah (2019) argue that the monopolistic nature of the electricity market has hampered investors doing business in the renewable energy sector, particularly because it has lowered energy tariffs from renewable energy sources. This has made the private sector hesitant about developing renewable energy in Indonesia. Tumiwa (2019) claims that this unclear prospect has caused many investors in the energy sector to flee to neighboring countries such as Vietnam, Philippines, Thailand and Malaysia. This concern was also shared by a director of a private energy company. He revealed:

"In our opinion, the Indonesian renewable energy sector has been destroyed by the policies of the Ministry of Energy and the Minister in particular. We are no longer investing in renewables in Indonesia (with the exception of the current project) as a result. We could have developed 500 MW of Solar in Indonesia at prices that would have saved PLN money. Instead after four years we have one 10 MW project approved. Because of this, we are shifting our focus to other economies that have positive policies and encourage investment in renewable energy." (Interview with author 2018)

Considering the power possessed by PLN, it is important to hold PLN accountable in its business process. The concept of accountability refers to the mechanism to hold to account and thereby control the actions of those who have authority (Bovens, 2007; Sarker, 2009). Anindarini (2018) argues that PLN is different from other state-owned companies. Although all state-owned companies have the primary goal of generating a profit, PLN is the bearer of a constitutional mandate and is the only institution assigned the responsibility of Indonesia's

electricity infrastructure. Thus, the PLN business plan or RUPTL is not just a company's business strategy as it concerns the whole country's interest.

Those who formulate RUPTL need to be held accountable to the public. To improve accountability, Barberis (1998, p. 467) argues that the governance system must embed mechanisms such as requirements to provide an explanation and information to the public, to allow for stakeholder's involvement and to impose sanctions for malfeasance. In other words, accountability can be improved by promoting transparency and public participation. The implementation of both of these governance indicators can help to ensure the provision of effective, reliable and sustainable energy services in the near and long-term power services (Environmental Protection Agency, 2015). Transparency and public participation characterize power resource planning in the United States, where the electricity plan is made public in order to obtain comments, concerns and inputs from the people and wider stakeholders as the basis for improvement (Anindarini, 2018).

Tough business competition with fossil energy

The direction of energy policy has been altered and thereby created a less supportive environment for renewable energy development. One indicator is the removal of the prices subsidy or Feed in Tariff (FiT) mechanism. FiT is claimed to have a positive correlation with private investment in the renewable energy sector (Rodríguez, Haščič, Johnstone, Silva, & Ferey, 2015) and it helps renewable energy to compete with the established fossil energy system. More surprisingly, the Indonesian government replaced the FiT mechanism with a new tariff regime which has placed more pressure on the private sector as the selling price of renewable energy is most likely to decrease. This policy change has been protested by private energy providers and shows the lack of transparency and public participation in the regulation making process.

On the other hand, fossil energy, particularly coal, is continuously gaining support from the government. Coal is a big industry in Indonesia. Coal is cheaper and Indonesia has large reserves of it (Cornot-Gandolphe, 2017). It is one of the major revenue sources for the country. In 2019, the estimated revenue from the mineral and coal sectors is expected to reach Rp25 trillion or USD1.67 billion (MoF, 2019). Additionally, the coal industry has ties with the top political actors of the country. Arinaldo and Adiatma (2019) argue that coal is a political commodity and a funding source for political campaigns at the national and sub-national levels. Furthermore, Greenpeace, Watch, Jatam, and Auriga (2019) report that money from coal played a big role in Indonesia's presidential election in 2019 and that this involved presidential candidates, ministers, legislators, heads of political parties and other high ranking actors. These conditions have made the task of controlling coal production more difficult as multiple stakeholders stand to gain benefits from it. As a result, the position of coal in Indonesia's energy sector is very difficult to dislodge. In addition, the government enacted a Law regarding Minerals and Coal which essentially provides incentives for the coal industry.

7.5.4 Regulatory Barriers

Legal Framework

The legal framework has been seen as one of the barriers to achieving greater transparency and public participation (Güneş & Coşkun, 2005; Pasquier & Villeneuve, 2007). In Indonesia, issues regarding public information disclosure and public engagement in the energy policy making process are regulated by laws. However, as discussed in Sections 7.2 and 7.3, transparency and public participation have not been effectively implemented.

One of the issues regarding the legal framework for renewable energy sector concerns the extent to which detailed arrangements for public participation exist. To date, there is no specific regulation that stipulates the mechanism for ensuring direct participation in the policy-making process. As a result, the public participation process is dependent on the initiative of

the authorities (Rachmi et al., 2005). This is problematic because the public participation process can be orchestrated so as to ensure the result that the officials want by such means as the selection of participants and the time and location of meetings.

Another problem regarding the legal framework is the lack of binding rules. There is no obligation for authorities to provide quality information or an effective participation process as there are no sanctions stipulated in the existing regulations. As a result, requirements for transparency and public participation are often overlooked particularly when it comes to the involvement of wider stakeholders, as this is found to be a challenging, lengthy and costly process. This finding accords with that of Johnson (2010) study which found high levels of skepticism about public participation among many government officials. This is because transparency and public participation could reveal a Pandora's box of grievances and thereby jeopardize the intended purposes.

Having said that, an effective legal framework should be established in order to support effective transparency and to provide for public participation. More detailed and supportive regulations are required. O'faircheallaigh (2007) argues that a legally binding framework is imperative in order to ensure the provision of information and of opportunities for outsiders to participate and to have their voices heard on public matters. He adds that these factors are of particular importance in the case of marginalised and powerless people.

7.6 Conclusion

The evaluation of governance practice was conducted with respect to the formulation of two local regulations and the development of two renewable energy projects in Yogyakarta. Two governance indicators become the focus of evaluation, namely transparency and public participation. The summary of the evaluation results is presented in Table 7.2.

Table 7.2: Summary of the Evaluation of Transparency and Public Participation of Renewable Energy Governance in Yogyakarta

Indicators	Explanation
TRANSPARENCY EVALUATION	
Process-based	
Visibility	The amount of information released to the public is limited. However, more information can be obtained through official requests. This condition can be regarded as one of "passive transparency". Risks of project development are not fully laid-off during the consultation process. Hidden information regarding negative impacts of the project tends to manipulate public perception and to induce acceptance of the renewable energy project.
Usefulness/Meaningful information	*Perda* Renewable Energy lacks meaningful information that is valuable for stakeholders, particularly the private sector, to be utilized in making investment decisions. The lack of strategy, potential projects and future commitment are the main points that are missing from the regulation.
Communication	Communication and exchange of information were evident at the early stage of the *Perda* Making process and project development. However, in the case of PLTH Pantai Baru, the level of communication decreased over time due to the lack of commitment from provincial government to further develop the PLTH.
Outcomes-based	
Trust	Incomplete information and the absence of meaningful information have negatively affected the level of trust.
PUBLIC PARTICIPATION EVALUATION	
Process-based	
Inclusivity	Multiple stakeholders were involved in meetings and public hearings. Multiple government institutions, universities, NGOs and energy industries were invited to share their perspectives. However, in the *Perda* making process, local communities were barely involved in the consultation meetings.
The quality of deliberation	The low quality of deliberation was mainly caused by two factors, namely lack of knowledge about renewable energy issues and local cultures that influence the people, particularly those who live in villages, to become reluctant to challenge claims from respectful or powerful parties.
Outcomes-based	
Influence on decision	Public inputs, such as development mechanism, incentives and arrangements of renewable energy utilization in transportation, business, and industry sectors were minimally integrated into decisions.

Public education	In the *Perda*-making process, the effort to educate or campaign for the importance of renewable energy was barely discernible. On the contrary, during the establishment of renewable energy projects, local communities gained significant knowledge about renewable energy. Some even became operators that maintain and operate the renewable energy power plant.

Overall, the study concludes that a lack of transparency and public participation has influenced the development of renewable energy in Indonesia. While transparency has an important role to play in ensuring accountability, keeping the public informed and building trust, public participation was found to be vital for gaining legitimacy, mobilizing support from stakeholders, enhancing the quality of decisions and improving public knowledge and awareness.

From the evaluation, a number of barriers to effective implementation of transparency and public participation were also identified. The barriers were grouped into four categories. These were individual barrier (the level of education and economic condition), cultural barrier (the monarchy system of Yogyakarta), institutional barrier (centralized governance process, lack of commitment from the central and provincial governments, monopolistic market structure, and competition with fossil fuel industry), and regulatory barrier (lack of binding regulation promoting transparency and public participation).

The next chapter is the final chapter. It will summarise the thesis, explore its policy implications and note its limitations.

CHAPTER 8
SUMMARY OF FINDINGS, POLICY IMPLICATIONS, AND CONCLUSION

The aim of this final chapter is to sum up the key findings of the study, identify its policy implications and propose an alternative governance model that could help to promote the development of renewable energy in Indonesia. It consists of three sections. The first section summarises the key findings of the thesis. Section two identifies the policy implications of the research findings. A new form of governance is proposed as an alternative model for a more effective governance process to promote the development of renewable energy in Indonesia. Finally, the last section discusses the limitations of the study and avenues for future research.

8.1 Summary of Key Findings

Key findings of this study are summarised in Table 8.1.

Table 8.1: Key Findings

	Research Questions	Research Findings
1	To what extent is the decision-making process in the renewable energy sector transparent to stakeholders?	Transparency in decision-making process was found to be lacking. Deficiencies in regard to the level of completeness and usefulness of information have adversely affected the level of trust and stakheholders' confidence in renewable energy development in Yogyakarta. The lack of trancparency has also created a negative perception toward renewable energy projects.

2	To what extent does the decision-making process in the renewable energy sector involve people's participation and how?	While, public participation processes were evident in the initial stage of the establishment of renewable energy projects (i.e.: PLTH Pantai Baru and PLTH Semawung), public involvement in decision-making process faded away overtime. Public participation during pre-construction stage has helped gain public acceptance, generate legitimacy for decisions, enhance knowledge, and mobilize support from the stakeholders. However, scopes and opportunities for public participation became unavailable once renewable energy projects went into operation. This was also indicated by the lack of communication and coordination between the project developers/operators and local people over important decisions.
3	What are the challenges to effective transparency and public participation?	Various barriers to effective transparency and public participation were identified. These include individual barriers (education/knowledge, economic status), cultural barriers (local values), institutional barriers (the level of commitment, monopolistic energy market, centralized system), and regulatory barriers (regulation and legal framework). Institutional barriers were found to be the most critical obstacles to effective transparency and greater participation in the governance process..
4	How can governance practices be improved to enhance renewable energy development?	This study suggests that current governance processes need to be modified. Greater transparency and public participation should be embedded into the energy policy process to push the renewable energy agenda. The integration of both elements will facilitate a bottom-up monitoring process that can hold government elites accountable over the decisions or actions taken. Furthermore, transparency and public participation have the potential to reduce the concentration of political and economic power in the energy sector, besides helping propel the transition towards renewable energy.

8.2 Policy Implications

A new form of governance that allows for greater levels of transparency and public participation is required to deal with cross-cutting policy issues such as that of renewable energy development. The challenge is how to improve governance processes by incorporating greater transparency and wider stakeholder engagement and balancing multiple values and interests while simultaneously embedding sustainable elements into them. A collaborative governance process is proposed. However, it is worth reiterating the reasons why the current centralized approach in the energy governance process has been ineffective in accelerating renewable energy development in Indonesia.

8.2.1 Current State: centralized approach has been ineffective

The centralized or top-down approach has been ineffective in accelerating the development of renewable energy sources. As noted, renewable energy in Indonesia is currently developing at a slow pace, hence renewable energy targets stipulated in the National Energy Policy are unlikely to be achieved. In 2018, the share of renewable energy in Indonesia reached 8.5 percent of total energy output (MEMR, 2019a) which is far below the national target of achieving 23 percent by 2025.

The ineffectiveness of a centralized or top-down approach to improving renewable energy development in Indonesia can be attributed to two main factors. The first is the nature of renewable energy development which necessarily involves multiple stakeholders with different interests. Second, energy policy in Indonesia is highly politicized. The dominant central government is prone to be unduly influenced by powerful economic and political forces. Hence, wider participation particularly from pro-renewable energy actors is necessary to keep the agenda on track.

Renewable energy development is a wicked problem

Borrowing from Rittel and Webber (1973), renewable energy development can be perceived as being a wicked problem. The wickedness of renewable energy development as a problem can be attributed to its high level of complexity (interdependencies among stakeholders with multiple perspectives), uncertainty (unclear policy direction and commitment from the government) and the need to rely on political judgments when seeking a resolution to it.

The complexities in developing renewable energy have also been compounded by the social dimension of the problem. The social dimension of renewable energy has also been recognized in the United Nations Sustainable Development Goals (SDGs), particularly goal number 7, which aims to improve universal access to affordable, reliable and clean energy. In addition, renewable energy can be considered as a common good. This is the case not only because of presence of the elements of rivalry and non-excludability in the case of renewable energy sources such as wind, solar and hydro but also because energy is a necessary element for modern societies (Blanchet, 2016).

Furthermore, the wickedness of the problem of renewable energy development is accentuated by variables such as time limitations, the fact that those who are responsible for causing the problem also seek to provide solutions, weak efforts from central authorities to address the problem and irrational discounting of expected costs that push responses into the future (Levin, Cashore, Bernstein, & Auld, 2012).

Framing renewable energy development as a wicked problem is relevant to a better understanding of the phenomenon. Environmental policies that seek to transition toward renewable energy cannot be applied in isolation due to the complex interactions and conflicting interests between different policy priorities and portfolios (Reed et al., 2018).

This study has found that the centralized approach or top-down policy process has failed to address the multiple concerns of stakeholders thereby resulting in limited participation. It has undermined the values and concerns of implementing bodies and failed to acknowledge the

role that can be played by local resources and skills. Additionally, the centralized approach views problems separately, so that it unduly isolates the problem from surrounding factors, priorities and actors which potentially have much to do with the problem. This has provided policy makers with an incomplete picture of the problem and thereby produced ineffective policies and regulations.

A new governance process is required. This thesis suggests that greater transparency and public participation in governance processes could help to deal with the wickedness of the renewable energy development issue. Similarly, Head (2008) argues that effective consultation and collaboration among stakeholders are important to deal with wicked problems in order to gain a clearer and complete picture. A governance process, therefore, must enable agencies to work across boundaries and to effectively engage with stakeholders in understanding the problem and in identifying possible solutions. Furthermore, collective actions from all stakeholders are required in order to successfully transform an energy system from fossil to renewable sources.

Energy is a highly politicized matter

The other reason why a highly centralized governance process has been ineffective in improving Indonesia's use of renewable energy is because energy is a highly politicized matter. It is a commodity that is entangled in Indonesia's political and economic system. Improving renewable energy utilization, to some degree, requires a change to the structure of the energy market. Hence, it can reduce the market share of fossil sources such as coal.

Apart from its large reserves and already established energy system, the coal industry maintains its position in Indonesia's development plan and policy framework through political channels. In Indonesia, the coal industry plays a substantial role in shaping policy as it involves top politicians and bureaucrats in the country (Greenpeace et al., 2019). This is in line with the findings of the study by P. J. Burke et al. (2019) which show that fossil energy

often becomes the biggest challenge for renewable energy development as it is backed up by powerful political and economic forces. This has made the effort to transition the energy system to renewable sources even more difficult.

The policy bias in favour of fossil energy was evident in Indonesian energy policies and regulations. For example, the removal of a Feed in Tariff (FiT) for renewable energy in 2017 discouraged private energy providers from developing renewable energy. The most recent example is the enactment of Law number 3 of 2020 regarding Mineral and Coal (UU Minerba) in May 2020. This law supports the coal industry by allowing for the renewal of permits, longer contracts and larger exploration areas (article 22, 42, 83 and 169). To protect a company's interests, the law also stipulates the possibility of imprisonment or fines for those who reject or hamper mining activities (article 162 and 164). From a political and administrative perspective, the law has re-centralized authority in the governance of mineral and coal (article 4). This stipulation has attenuated local government's authority and negated the spirit of a decentralized system. The arrangement of the Law will likely result in a higher supply of, and cheaper prices for, coal and put more pressure on renewable energy development. Furthermore, the National Energy Council also predicted that coal production for the purpose of providing a source of energy will continue to increase until 2050 (National Energy Council, 2019).

The State Electricity Company - PLN as the monopoly right holder in the electricity sector - also has an interest in fossil sources. The monopolistic nature of the electricity market in Indonesia has enabled PLN to gain control over electricity distribution and transmission throughout Indonesia. Further, PLN was granted greater authority in the renewable energy sector. Through the regulation of MEMR, PLN has the right to determine the project developer, something which was previously done by a tender process. This situation enables PLN to fix the selling price of renewable energy and puts the independent energy producers

in a weak position in price negotiations. This authority of PLN is problematic as there is a conflict of interest. Most of PLN's power plants are fuelled by fossil sources, particularly coal. PLN is likely to seek to maintain the status quo in order to avoid profit loss and stranded assets. Bridle (2018) has raised this concern and argued that PLN as a powerful player in the energy sector has a low level of commitment to promote renewable energy.

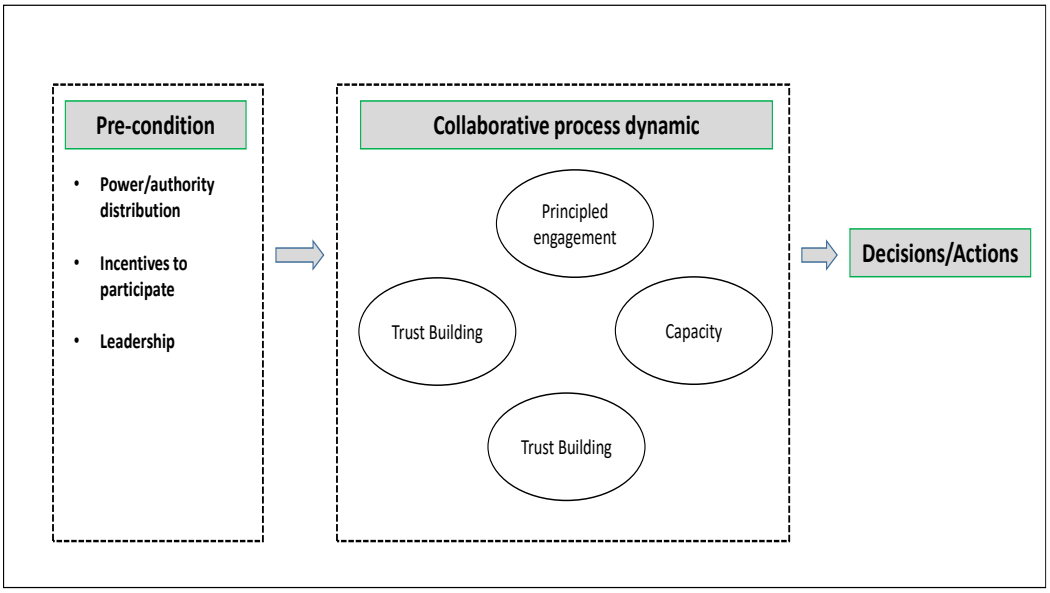
The bias of central government and PLN towards fossil sources has hampered initiatives from provincial government to develop renewable energy. The study in Yogyakarta has shown that the initiatives to develop renewable energy cannot be effectively implemented without central government and PLN support. Permits or licensing authorities mainly lying with in the central government and difficult business negotiations with PLN are just a few of the factors that inhibit the development of renewable energy in Yogyakarta.

8.2.2 A Way Forward: A Collaborative Governance Process

This thesis developed a framework to facilitate effective collaboration among stakeholders. The framework draws on the concept of collaborative governance from scholars such as Ansell and Gash (2008) and Emerson et al. (2012). The purpose is to provide a conceptual map for situating and enabling cross boundary collaboration in governance processes.

As can be seen from Figure 8.1, the collaborative governance framework comprises two major stages: (1) Establishing the pre-conditions necessary to ensure effective collaboration and (2) The collaborative governance process. Each stage consists of the elements that are required in order to construct the environment for collaborative governance process.

Figure 8.1: Collaborative Process Framework



Adapted from: Emerson et al. (2012) and Ansell and Gash (2008)

8.2.2.1 Establishing the pre-conditions

Establishing pre-conditions is necessary to provide a foundation for effective collaboration among stakeholders. To build appropriate pre-conditions, three elements are suggested. These elements are power distribution, incentives to participate and leadership.

a. Power distribution

Collaborative governance essentially promotes broader involvement of actors involved in collective decision making in order to carry out a public purpose. These actors include all levels of government, the private sector and civil society organisations. Ansell and Gash (2008) argue that without a balance of actors, the governance process will be prone to manipulation by the stronger actors. The empowerment of less powerful actors also can ensure that dissenting voices are heard and promote greater administrative efficiency and accountability (Berkes, 2010; Warner, 2006).

Power imbalance has been seen as a common factor that hampers collaborative governance processes (Bryson, Crosby, & Stone, 2006; Choi & Robertson, 2014; Purdy, 2012; Warner,

2006). It may cause distrust and a lack of commitment that constrains the collaborative process (Ansell & Gash, 2008). This is because more powerful actors have better access to decision makers and are accordingly better able to pursue their interests throughout the decision-making process.

The study shows that renewable energy advocates tend to be in a relatively weak position and are often overlooked in decision-making processes. Their central concerns, such as establishing a competitive energy tariff and the financing schemes, were barely addressed within the generated policies or programs. On the other hand, the coal industry was found to have special access to key policy makers. Their close relationships with top political figures and bureaucrats enabled them to influence the policy arrangements and to maintain their position in Indonesia's energy sector.

The imbalance of power was also apparent between PLN and private energy providers. With the new regulation, Regulation of MEMR number 50 in 2017, PLN has the authority to directly select the project developer without an open tender process. In other words, to be able to secure the project, private energy companies must follow all PLN's terms including a lower price for renewable energy, which left a very small margin for independent energy producers. This has worsened the business climate for renewable energy. For example, two directors of private energy companies revealed their reluctance to be involved in Indonesia's renewable energy projects in the future.

Indeed, power sharing is likely to face resistance from the power holders. Hence, measures are required to counter powerful actors and vested interests. Sweeney (2012) argues that energy systems need to be restructured to become more democratic. This will allow the less powerful actors to have a voice and to ensure that their views are taken into account. The distribution of powers among stakeholders is necessary to enable collaboration among stakeholders. However, although government's role is contested, the central government

should remain the lead actor (Giddens, 2009) albeit mainly as the catalyst or facilitator of energy transition.

Additionally, the establishment of an independent authority for renewable energy development can be an alternative to address the power imbalance and the non-neutrality of existing authorities (Anupama Sen, Nepal, & Jamasb, 2016). This has been done by Indonesia's neighbouring countries such as Thailand, Malaysia and The Philippines. In Thailand, for example, an independent regulatory authority has the authority to review energy tariffs, to prescribe the size and type of energy business, to prescribe business procedures and to issue permits. This new institutional arrangement offers an alternative way of solving the problematic conditions faced in Indonesia's renewable energy sector. Furthermore, the creation of a neutral agency that can act as a "referee" was among the demands made by private renewable energy providers in order to solve conflicts during business negotiation or contract agreement.

b. Incentives to participate

It is evident that some stakeholders are reluctant to get involved in the governance process unless they receive incentives or benefits. Incentives can include material incentives (e.g. subsidy, profit, affordable energy price), solidarity incentives (e.g. communities' or institutions' empowerment, provisions of public facilities), and purposive incentives (e.g. an enactment of supportive regulations such as simplification of permits, delegation of authority) (Clark & Wilson, 1961). These incentives are perceived to motivate stakeholders to engage in a collaborative process for developing renewable energy.

Additionally, the willingness to participate in the governance process can be influenced by the expectation that such participation could yield improvements, considering the time and energy that must be sacrificed to engage in such a process. Ansell and Gash (2008) claim that the motivation to participate will increase if stakeholders see that the participation

process produces tangible and effective outcomes. In other words, the results or outcomes cannot be achieved through a unilateral process in which dominant actors single-handedly take the initiative. For example, to accelerate renewable energy utilization the central government and PLN are required to cooperate with other stakeholders such as private energy providers and citizens. Thus, it is important to recognize that incentives are needed to get stakeholders involved in the collaborative process.

In the interviews, the incentives from central government that were desired by provincial/local governments, experts, the private sectors and the local community were revealed. It was perceived that there was a failure by government to provide financial support, training and the simplification of permits and other incentives that can encourage public participation. This lack of commitment from central government is displayed by the fact that it provides limited support and incentives for renewable energy development. Without a strong commitment to transform the energy system, the energy policy landscape is still one that largely favours fossil energy and which discourages stakeholders from seeking to develop renewable energy in Indonesia.

c. Leadership

Leadership is a fundamental element in creating collaborative governance processes. The role of facilitative leadership is particularly vital in an issue such as energy transformation. This is not only because it is a complex problem which involves the multiple interests of different stakeholders but also because it involves existential risks that threaten the future of humanity (Bostrom, 2011).

Leadership has a role to play in determining the effectiveness of collaborative processes. The importance of leadership includes bringing and steering participants into participatory processes (Gunton & Day, 2003; Imperial, 2005), setting up the ground rules and facilitating dialogue (Ansell & Gash, 2008) and empowering less powerful stakeholders (Ozawa, 1993).

A leader is a facilitator who embraces and empowers participants especially the less powerful ones. Selin and Chevez (1995) argue that the success of collaboration sometimes depends on a leader whose energy and vision can propel actors to participate. For example, the coordinator of the PLTH Pantai Baru (Ministry of Research and Technology) project involved the local community and introduced the project by explaining the importance and impact of the project to the local people. The simple initiative has motivated local people to support and engage with the project throughout its development. This allowed the project developer to address stakeholder concerns effectively and resulted in a better outcome that is acceptable for all since it takes into account diverse perspectives and concerns. Ansell and Gash (2008) argue that leadership becomes more important when there are conditions such as significant power asymmetry, lack of incentives and bad relationships among stakeholders, as was found in the case of renewable energy governance in Indonesia.

Serious commitment to renewable energy is required from the leader. Having the commitment means that the leader is willing to involve broader participants since transforming the energy system requires collective action from diverse stakeholders. The willingness of the leader must also extend to bearing the higher costs that are incurred during the participatory process such as providing personnel and access to information and conducting public forums (Emerson et al., 2012).

In addition, the leader is required to be neutral and facilitative by giving all stakeholders opportunities to have a voice and to be heard. Emerson et al. (2012) maintain that besides a strong commitment, a leader should not demonstrate partiality to the preferences of certain participants such as the partiality shown by the Indonesian government and PLN to coal industry interests.

A leadership role at the national level is essential to facilitate the development of renewable energy in Indonesia. The case of Yogyakarta shows that the initiatives from the provincial

government and local communities to advance renewable energy were constrained by limitations of resources and knowledge. In other words, renewable energy development in Indonesia is highly dependent on support and commitment from the central government. Hence, leadership is required from the President and the Ministers, key actors that have the authority and resources.

The facilitative role that leadership can play in developing renewable energy will be the key element in shaping the future of sustainable energy in Indonesia. Indeed, it is a great challenge to align multiple interests, while embracing, empowering and involving multiple stakeholders. Thus, strong commitment is essential as without leadership, renewable energy targets stipulated by the government will only be wishful thinking.

8.2.2.2 Collaborative Dynamics

Having acknowledged the necessary elements that set the initial conditions for facilitating a collaborative process, this section discusses how a collaborative process can work effectively in practice and lead to consensus-based decisions or outcomes. A collaborative process is regarded as being an iterative process, meaning that it is a back-and-forth process which allows the participants to reflect and adjust when things do not work effectively, rather than a process that follows a linear sequence. Adapting from the work of Ansell and Gash (2008) and Emerson et al. (2012), this study suggests that three interactive components are required in order to build effective collaborative governance processes, namely, principled engagement, trust building and the capacity for joint action.

a. Principled Engagement

Principled engagement refers to the cross boundary interaction of diverse stakeholders in order to develop a shared understanding of the problem and to achieve the common goal. Emerson et al. (2012) argue that principled engagement is built through the iteration of four

basic process elements: *discovery* (revealing stakeholder's interests and examining the implications of that information), *definition* (developing common purposes, adjusting tasks and expectations), *deliberation* (discussion, asking challenging questions and expressing disagreement) and *determination* (joint determination in setting targets and formulating action plans)

Principled engagement can be seen as a means of engaging in renewable energy advocacy. It has the advantage of dealing with complex problems that require collective action by exerting normative pressure along with positive support. The inclusion and active engagement of multiple stakeholders is required. By such means, principled engagement could change the existing centralized process in energy policy making. It can enable decision makers to establish close connections with key actors, provide them with fresh insights and promote the social, economic and environmental benefits of transitioning the energy system from fossil fuel.

b. Trust Building

Trust is commonly seen as a starting point to build good relationships among stakeholders (Ansell & Gash, 2008). It is the key element that is required for collaborative governance to function effectively. Emerson et al. (2012) assert that trust helps to nurture other aspects of interpersonal relations within participatory processes such as mutual understanding among stakeholders, since trust enables people to be open about themselves. The mutual understanding therefore, creates a shared commitment that mobilizes all participants to achieve a common purpose.

What has become evident from this study is that transparency in the policy making process and the disclosure of all relevant information about the impacts of renewable energy development need to be enhanced in order to improve the level of trust. Leach, Weible, Vince, Siddiki, and Calanni (2014) suggest that establishing a fair procedure within the governance

process can build trust. The fair procedure allows all stakeholders to have the opportunity to convey their views regarding renewable energy policies and programs and to ensure that their voices are heard. Trust also initiates the next important element in a collaborative process, namely, commitment. Given that multiple actors are involved in the development of renewable energy, trust building is crucial, particularly because actors are unknown to each other or may have had bad relationships in the past.

c. Commitment

The level of participant's commitment to collaborative processes is significant in determining the success or failure of collaboration as it is the factor that enables participants to work across boundaries and to operate together. Commitment to collaboration means providing all relevant information and recognizing stakeholders' values so that desirable decisions can be reached through consensus (Burger et al., 2001). In addition, commitment to the process also means a willingness to abide by the result of the process even though the outcome generated did not match participants' expectations (Emerson & Nabatchi, 2015).

This study suggests that stakeholder's commitment to participate in renewable energy development tends to be low. This was indicated by the reluctance of provincial governments, private energy providers and local communities to pursue renewable energy development and their scepticism about its value. Arguably, the reluctance and scepticism of stakeholders was driven by the lack of commitment from the central government. In this sense, lack of commitment from the central government as the most powerful and resourceful actor has a cascading effect on other stakeholders' levels of commitment. This is in line with the findings of the study by Yaffee and Wondolleck (2010). They claim that the biggest challenge in establishing a collaborative process often comes from public agencies as they are likely to see themselves as the regulator or decision makers.

Indeed, a clear, fair and transparent procedure can improve stakeholder's commitment (Ansell & Gash, 2008). However, it is also important for the leader, the central government, to demonstrate their commitment to a collaborative process through providing incentives and venues for public forums or by modifying procedures and arrangements in the decision-making process. The central government needs to acknowledge the significance of other stakeholders in determining the future success of renewable energy in Indonesia. Saarikoski (2000) calls this process one of mutual recognition. Interdependency among stakeholders, therefore, necessitates a collaborative process among them so that they can jointly achieve their goals.

d. Capacity for joint action

Capacity for joint action refers to the participants' ability to work together in following a shared path. Emerson et al. (2012) define the capacity for joint action as the collection of elements which enables effective actions. They identify four functional elements which are fruitful for improving collaboration between stakeholders in developing renewable energy in Indonesia. These elements are procedural and institutional arrangements, leadership, knowledge and resources.

Procedural and institutional arrangements encompass procedures or hierarchies to facilitate interactions among stakeholders. Complicated and lengthy procedures for obtaining permits have become a major problem that hinders private investment in renewable energy. Hence, simplification of regulations or institutional reform is necessary to establish collaborative processes. The next element is leadership. As mentioned before, leadership is a fundamental element in building collaborative governance processes. A collaborative process provides multiple roles for leaders. The roles of leaders can vary depending on the stages or tasks in the collaborative process (McIsaac, Kelly, Turner, & Kirk, 2020). For example, the Sultan's influence is more effective in dealing with traditional values or resistance from individuals in

Yogyakarta while the central government can serve as the sponsor of change, since it possesses the requisite authority and access to resources. In addition, a collaborative process enables non-governmental actors to become leaders. Examples are experts from universities or private energy providers who have expertise in managing the technological aspects.

The next element that can facilitate a capacity for joint action is knowledge. By involving multiple actors, the collaborative process can produce diverse data and information, particularly when multiple aspects are interlinked as in the development of renewable energy. Hence, the collaborative process requires knowledge to understand and make use of information. Groff and Jones (2012) argue that knowledge guides actions, whereas information can merely inform or confuse. Additionally, the collaborative process can enhance participant's knowledge as it enables transfer knowledge to occur between stakeholders. The last element that is required to strengthen the capacity for joint action is resources. One benefit of the collaborative process is to redistribute and leverage resources (Thomson & Perry, 2006). These include time, power, supports (financial, material and administrative) and expertise as it is these resources that are the most likely to be distributed unevenly among stakeholders (Emerson et al., 2012). Resource disparities were evident in renewable energy development in Indonesia. Provincial governments are constrained by limited financial and human resources and a lack of the requisite technology to develop renewable energy. Through a collaborative process, resource disparities can be leveraged and the capacity of participants to achieve their common goals can be enhanced.

8.3 Limitations of the study and Future Research

This thesis is subject to several limitations. First, this study employs a single case study approach with a relatively small number of participants. This methodology was deemed to be

an appropriate tool to study the complexity of the phenomenon and to enable the researcher to obtain an in-depth understanding of a specific case (Yin, 2018). However, the political, social, economic and legal contexts of the study constrain the research generalisability. Being the province with the best governance index in Indonesia, the findings from Yogyakarta might not be applicable to those provinces with a lower governance index. Therefore, further research is required to investigate different locations so as to reveal more about these phenomena in the field. In addition, to conduct another study with different characteristics and more participants would provide the basis for a broader generalisation.

Second, energy policy and its governance are a dynamic process. The field work was conducted from May to September 2018. There have been further developments regarding the policies, programs and the condition of renewable energy since then. These changes might affect the perspectives of participants and hence distort the analysis. It is recommended that further research be conducted in order to provide an understanding of the evolving context of renewable energy policy in Indonesia.

Third, the researcher's experience as a government official who has been regularly involved in the policy-making process might result in a bias in the interpretation and analysis. However, the issue of subjectivity is not uncommon in qualitative studies, particularly when the data must "go through" a researcher's mind before it is put it into written form (Rajendran, 2001). To ensure objectivity, this study applies verification strategies including checking methodological consistency, selecting appropriate participants, iterating between data and analysis and thinking theoretically (Morse, Barrett, Mayan, Olson, & Spiers, 2002).

8.4 Conclusion

It is apparent that energy governance in Indonesia poses a problem that could hamper the transition to renewable energy. The absence of transparency and public participation in the policy making process has enabled powerful political and economic actors to drive the

direction of energy policy in a way that serves their interests. As a result, policies and programs in the energy sector tend to favour the coal industry, whereas support for renewable energy development is insignificant.

Strong commitment and leadership from central government are vital for the transition towards renewable energy in Indonesia. The case in Yogyakarta indicates a high level of dependency of local governments on central government due to constraints such as a lack of knowledge, finance and authority in the energy sector. Hence, the central government should lead and drive the agenda for transitioning the energy system. However, this should not occur at the expense of the role of local government. In fact, power sharing is necessary. Local governments need to be given more authority to develop sustainable energy within their provinces, while the central government should provide more support to ensure that the local agenda is consistent with national policies.

A new form of governance is required. Greater transparency and public participation are required in the policy making process at all levels of government. While it is obvious that transparency and public participation can improve trust among stakeholders and legitimacy of the decisions made, the integration of both elements into the decision- making process is needed. This thesis suggests a framework to guide the integration of transparency and public participation in energy governance. Integration of these two elements can reverse the concentration of power in the policy making process and enable the public to monitor it, thereby ensuring that renewable energy is a top priority on the policy agenda. In addition, the flow of information and wider engagement can facilitate public learning and enhance public awareness about the urgency of renewable energy development and utilization.

BIBLIOGRAPHY

Abelson, J., Forest, P.-G., Eyles, J., Smith, P., Martin, E., & Gauvin, F.-P. (2003). Deliberations about deliberative methods: issues in the design and evaluation of public participation processes. *Social Science & Medicine, 57*(2), 239-251.

Abelson, J., & Gauvin, F.-P. (2006). *Assessing the impacts of public participation: Concepts, evidence and policy implications*: Canadian Policy Research Networks Ottawa.

ADB. (1999). Governance: Sound Development Management.

Adomokai, R., & Sheate, W. R. (2004). Community participation and environmental decision-making in the Niger Delta. *Environmental Impact Assessment Review, 24*(5), 495-518.

Agrawal, A. (2007). Forests, governance, and sustainability: common property theory and its contributions. *International Journal of the Commons, 1*(1), 111-136.

AirVisual. (2019). World AQI Ranking. Retrieved from https://www.airvisual.com/ [Accessed 30 July 2019].

Akhmad, A., & Amir, A. (2018). Study of fuel oil supply and consumption in Indonesia. *International Journal of Energy Economics and Policy, 8*(4), 13-20.

Amindoni, A. (2017). Presiden Jokowi didesak segera revisi proyek listrik 35.000 MW. Retrieved from https://www.bbc.com/indonesia/indonesia-41557127 [Accessed 26 November 2019].

Andrews, M., Pritchett, L., & Woolcock, M. (2013). Escaping capability traps through problem driven iterative adaptation (PDIA). *World Development, 51*, 234-244.

Ansell, C. (2012). Collaborative governance. In *The Oxford handbook of governance*.

Ansell, C., & Gash, A. (2008). Collaborative governance in theory and practice. *Journal of Public Administration Research and Theory, 18*(4), 543-571.

Appunn, K., Haas, Y., & Wettengel, J. (2020). Germany's energy consumption and power mix in charts. Retrieved from https://www.cleanenergywire.org/factsheets/germanys-energy-consumption-and-power-mix-charts [Accessed 20 April 2021 2021].

Arnstein, S. R. (1969). A ladder of citizen participation. *Journal of the American Institute of Planners, 35*(4), 216-224.

Ashford, N. A., & Rest, K. M. (2001). Public participation in contaminated communities.

Asian Development Bank. (2015). Fossil Fuel Subsidies in Indonesia Trends, Impacts, and Reforms.

Asthana, A. N. (2012). Decentralisation and corruption revisited: Evidence from a Natural Experiment. *Public Administration and Development, 32*(1), 27-37.

Azizi, A. N., Nandini, F., Sakul, J. E., Jati, M. R. K., Dewanti, N. R., & Tanaya, S. (2017). Gerakan Organisasi Wahana Tri Tunggal Melawan Pembangunan Bandara di Kabupaten Kulon Progo, Daerah Istimewa Yogyakarta.

Badruzzaman, Y., & Widiastuti, A. N. (2014). *Roadmap energy in special region of Yogyakarta to empower renewable energy source.* Paper presented at the Technology Management and Emerging Technologies (ISTMET), 2014 International Symposium on.

Bahl, R. (1999). Implementation rules for fiscal decentralization. *International Studies Program Working Paper, 30*.

Bannister, F., & Connolly, R. (2011). The trouble with transparency: a critical review of openness in e-government. *Policy & Internet, 3*(1), 1-30.

Bappenas. (2017). MEETING THE DEVELOPMENT TARGETS WITH RENEWABLE ENERGY.

Bassano, J. (2021). SA renewables hit high mark in 2020. Retrieved from https://indaily.com.au/news/science-and-tech/2021/01/27/sa-renewables-peak-in-2020/ [Accessed 7 April 2021].

Becker, S. (2017). Our City, Our Grid: The energy remunicipalisation trend in Germany. *Reclaiming Public Services*, 118.

Beder, S., & Cahill, D. (2005). Regulating the power shift: the state, capital and electricity privatisation in Australia. *The Journal of Australian Political Economy,* (55), 5-22.

Beerepoot, M., Laosiripojana, N., Sujjakulnukij, B., Tippichai, A., & Kamsamrong, J. (2013). Incentives for renewable energy in Southeast Asia: case study of Thailand. *The International Institute for Sustainable Development (IISD), Winnipeg, Canada*.

Beierle, T. C. (1999). Using social goals to evaluate public participation in environmental decisions. *Review of Policy Research, 16*(3-4), 75-103.

Beierle, T. C. (2010). *Democracy in practice: Public participation in environmental decisions*: Routledge.

Bellamy, J. A., Walker, D. H., McDonald, G. T., & Syme, G. J. (2001). A systems approach to the evaluation of natural resource management initiatives. *Journal of Environmental Management, 63*(4), 407-423.

Bennet, R. (2010). Decentralizing Authority After Suharto: Indonesia's Big Bang, 1998-2010. *Innovations for Successsful Societies. Princeton University*, 1-11.

Benson, B. L. (2017). Are Roads Public Goods, Club Goods, Private Goods, or Common Pools? In *Explorations in Public Sector Economics* (pp. 171-213): Springer.

Benson, D., Jordan, A., Cook, H., & Smith, L. (2013). Collaborative environmental governance: are watershed partnerships swimming or are they sinking? *Land Use Policy, 30*(1), 748-757.

Bentrup, G. (2001). Evaluation of a collaborative model: a case study analysis of watershed planning in the Intermountain West. *Environmental Management, 27*(5), 739-748.

Bertot, J. C., Jaeger, P. T., & Grimes, J. M. (2012). Promoting transparency and accountability through ICTs, social media, and collaborative e-government. *Transforming government: people, process and policy*.

Besta, S. (2019). Top five solar power producing countries in Asia. Retrieved from https://www.nsenergybusiness.com/features/top-solar-power-countries-asia/ [Accessed 29 March 2021].

Bettcher, K. (2017). How Good Governance Got a Bad Name–and Why Governance Still Matters. [Accessed 31 December 2020].

Bevir, M. (2010). *The SAGE handbook of governance*: Sage.

Birkinshaw, P. (2006a). Freedom of information and openness: Fundamental human rights. Administrative Law Review*, 58*, 177.

Birkinshaw, P. (2006b). *Transparency as a human right.* Paper presented at the Proceedings-British Academy.

Birt, L., Scott, S., Cavers, D., Campbell, C., & Walter, F. (2016). Member checking: a tool to enhance trustworthiness or merely a nod to validation? *Qualitative Health Research, 26*(13), 1802-1811.

Blair, H. (2000). Participation and accountability at the periphery: democratic local governance in six countries. *World Development, 28*(1), 21-39.

Blanchet, C. (2016). Is Renewable Energy a Commons? *energycommonsblog.wordpress.com*.

Bogumil, J., & Immerfall, S. (1985). Wahrnehmungsweisen empirischer Sozialforschung. *Zum (Selbst-) Verständnis des sozialwissenschaftlichen Erfahrungsprozesses. Frankfurt am Main: Campus*.

Bollier, D. (2002). Reclaiming the Commons. *Boston Review*.

Bollier, D. (2011). The commons, short and sweet. *Bollier. org*.

Bollier, D. (2013). The Quiet Realization of Ivan Illich's Ideas in the Contemporary Commons Movement'. *David Bollier News Perspect. Commons*.

Bollier, D., & Helfrich, S. (2012). Introduction: the commons as a transformative vision. In: Amherst: Levellers Press.

Bollier, D., & Helfrich, S. (2014). *The wealth of the commons: A world beyond market and state*: Levellers Press.

Bond, A., Palerm, J., & Haigh, P. (2004). Public participation in EIA of nuclear power plant decommissioning projects: a case study analysis. *Environmental Impact Assessment Review, 24*(6), 617-641.

Booher, D. E. (2004). Collaborative governance practices and democracy. *National Civic Review, 93*(4), 32-46.

Bostrom, N. (2011). Existential risk prevention as the most important task for humanity.

Boulding, K. (1966). E., 1966, THE ECONOMICS OF THE COMING SPACESHIP EARTH. *New York*.

Bovaird, T., & Löffler, E. (2003). Evaluating the quality of public governance: indicators, models and methodologies. *International Review of Administrative Sciences, 69*(3), 313-328.

Bovaird, T., & Löffler, E. (2015). *Public Management and Governance*: Routledge.

BPS. (2019). Statistical Yearbook of Indonesia 2019.

BPS Yogyakarta. (2018a). INDIKATOR PEMBANGUNAN BERKELANJUTAN DAERAH ISTIMEWA YOGYAKARTA 2017/2018.

BPS Yogyakarta. (2018b). Statistik Daerah Provinsi Daerah Istimewa Yogyakarta 2018.

BPS Yogyakarta. (2018c). Yogyakarta in Numbers 2018.

BPS Yogyakarta. (2019a). INDEKS PEMBANGUNAN MANUSIA Daerah Istimewa Yogyakarta 2018.

BPS Yogyakarta. (2019b). Statistik Daerah Daerah Istimewa Yogyakarta 2019. *Yogyakarta: Badan Pusat Statistik Daerah Istimewa Yogyakarta*.

Bradshaw, C. J., Sodhi, N. S., PEH, K. S. H., & Brook, B. W. (2007). Global evidence that deforestation amplifies flood risk and severity in the developing world. *Global Change Biology, 13*(11), 2379-2395.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77-101.

Bridle, R. (2018). *Missing the 23 per cent target: Roadblocks to the development of renewable energy in Indonesia*: International Institute for Sustainable Development.

Bridle, R., & Kitson, L. (2014). The impact of fossil-fuel subsidies on renewable electricity generation. *GSI Report December, The International Institute for Sustainable Development (IISD)*.

Brinkerhoff, D. W., & Brinkerhoff, J. M. (2015). Public sector management reform in developing countries: Perspectives beyond NPM orthodoxy. *Public Administration and Development, 35*(4), 222-237.

British Petroleum. (2019). BP Statistical Review of World Energy.

Brown, E. D., Cloke, J. M., & Harrison, J. (2015). Governance, decentralisation and energy: a critical review of the key issues. Renewable Energy and Decentralization (READ).

Brundtland, G., Khalid, M., Agnelli, S., Al-Athel, S., Chidzero, B., Fadika, L., . . . de Botero, M. M. (1987). Our common future (\'brundtland report\').

Bryman, A. (2016). *Social research methods*: Oxford University Press.

Buchecker, M., Hunziker, M., & Kienast, F. (2003). Participatory landscape development: overcoming social barriers to public involvement. *Landscape and urban planning, 64*(1-2), 29-46.

Budiman, I., & Smits, M. (2020). How Do Configuration Shifts in Fragmented Energy Governance Affect Policy Output? A Case Study of Changing Biogas Regimes in Indonesia. *Sustainability, 12*(4), 1358.

Bulkeley, H., & Mol, A. P. (2003). Participation and environmental governance: consensus, ambivalence and debate. *Environmental Values*, 143-154.

Burger, J., Gochfeld, M., Powers, C. W., Waishwell, L., Warren, C., & Goldstein, B. D. (2001). Science, policy, stakeholders, and fish consumption advisories: developing a fish fact sheet for the Savannah River. *Environmental Management, 27*(4), 501-514.

Burns, T. R., & Stöhr, C. (2011). The architecture and transformation of governance systems: Power, knowledge, and conflict. *Human Systems Management, 30*(4), 173-194.

Cahyono, W. E. (2016). Penyebaran Pencemar Udara di Kota Yogyakarta.

Carepi, T. T. Y. a. C. J. (2009). Energi Outlook for Daerah Istimewa Yogyakarta Region.

Castiglioni, C., Lozza, E., & Bonanomi, A. (2019). The Common Good Provision Scale (CGP): A Tool for assessing people's orientation towards economic and social sustainability. *Sustainability, 11*(2), 370.

Chaisomphob, T., Sa-nguanmanasak, J., & Swangjang, K. (2004). Role of public participation in planning power plant projects in Thailand. *Science & Technology Asia*, 67-73.

Chaiyapa, W., Esteban, M., & Kameyama, Y. (2018). Why go green? Discourse analysis of motivations for Thailand's oil and gas companies to invest in renewable energy. *Energy Policy, 120*, 448-459.

Chaiyapa, W., Hartley, K., & del Barrio Alvarez, D. (2021). From end-users to policy designers: Breaking open the black box of energy technocracy in Thailand. *Energy Research & Social Science, 73*, 101912.

Chambliss, D. F., & Schutt, R. K. (2018). *Making sense of the social world: Methods of investigation*: Sage Publications.

Chanthawong, A., & Dhakal, S. (2016). Liquid biofuels development in southeast asian countries: an analysis of market, policies and challenges. *Waste and biomass valorization, 7*(1), 157-173.

Cheema, G. S., & Rondinelli, D. A. (2007). *Decentralizing governance: emerging concepts and practices*: Brookings Institution Press.

Chess, C., & Purcell, K. (1999). Public participation and the environment: Do we know what works? In: ACS Publications.

Cheung, G., & Davies, P. J. (2017). In the transformation of energy systems: what is holding Australia back? *Energy Policy, 109*, 96-108.

Chompunth, C. (2011). *An evaluation of the public participation practice in environmental development projects in Thailand: A case study of the Hin Krut power plant project.* University of East Anglia.

Christensen, L. T. (2002). Corporate communication: The challenge of transparency. *Corporate Communications: An International Journal*.

Coenen, F. (2009). Local Agenda 21:'meaningful and effective'participation? In *Public participation and better environmental decisions* (pp. 165-182): Springer.

Coenen, F. (2009). Public participation and better environmental decisions. *The Promise and Limits of Participatory Processes for the Quality of Environmentally Related Decision-making*, 209.

Cohen, J. M., Peterson, S. B., & Peterson, S. B. (1999). *Administrative decentralization: Strategies for developing countries*: Kumarian Press West Hartford, CT.

Cornot-Gandolphe, S. (2017). *Indonesia's Electricity Demand and the Coal Sector: Export Or Meet Domestic Demand?* : Oxford Institute for Energy Studies.

Costa-Font, J., & Greer, S. (2016). *Federalism and decentralization in European health and social care*: Springer.

Cotterrell, R. (1999). Transparency, mass media, ideology and community. *Journal for Cultural Research, 3*(4), 414-426.

Craig, S. B., & Hannum, K. M. (2007). Experimental and quasi-experimental evaluations. *The handbook of leadership development evaluation*, 19-47.

Creighton, J. L. (2005). *The public participation handbook: Making better decisions through citizen involvement*: John Wiley & Sons.

Creswell, J. W. (2013). *Research design: Qualitative, quantitative, and mixed methods approaches*: Sage publications.

Creswell, J. W., & Clark, V. L. P. (2017). *Designing and conducting mixed methods research*: Sage publications.

Crow, G., & Wiles, R. (2008). Managing anonymity and confidentiality in social research: the case of visual data in Community research.

Crowe, S., Cresswell, K., Robertson, A., Huby, G., Avery, A., & Sheikh, A. (2011). The case study approach. *BMC medical research methodology, 11*(1), 100.

Daly, M. (2003). Governance and social policy. *Journal of Social Policy, 32*, 113.

Dawes, S. S. (2010). Stewardship and usefulness: Policy principles for information-based transparency. *Government Information Quarterly, 27*(4), 377-383.

Day, R., Walker, G., & Simcock, N. (2016). Conceptualising energy use and energy poverty using a capabilities framework. *Energy Policy, 93*, 255-264.

De Fine Licht, J., Naurin, D., Esaiasson, P., & Gilljam, M. (2014). When does transparency generate legitimacy? Experimenting on a context-bound relationship. *Governance, 27*(1), 111-134.

De Vries, M. S. (2013). The challenge of good governance. The Innovation Journal: The Public Sector Innovation Journal, 18(1), 2013, article 2.

Dearnley, C. (2005). A reflection on the use of semi-structured interviews. *Nurse researcher, 13*(1).

Deloitte. (2016). 35000 MW: A Light for the Nation.

Denscombe, M. (2009). *Ground rules for social research: Guidelines for good practice*: McGraw-Hill Education (UK).

Denzin, N. K. (2017). *The research act: A theoretical introduction to sociological methods*: Transaction publishers.

Department of Energy Yogyakarta Province. (2018). *Arah Kebijakan Pengembangan Energi Baru Terbarukan*. Yogyakarta.

Department of the Environment and Energy. (2019). *Australian Energy Statistics, Table O*. Retrieved from https://www.energy.gov.au/sites/default/files/2019_aes_table_o_march_2019.pdf.

DeSantis, L., & Ugarriza, D. N. (2000). The concept of theme as used in qualitative nursing research. *Western Journal of Nursing Research, 22*(3), 351-372.

Dharmawan, A., Sudaryanti, D., Prameswari, A., Amalia, R., & Dermawan, A. (2018). *Pengembangan bioenergi di Indonesia: Peluang dan tantangan kebijakan industri biodiesel* (Vol. 242): CIFOR.

Diduck, A., & Mitchell, B. (2003). Learning, public involvement and environmental assessment: A Canadian case study. *Journal of Environmental Assessment Policy and Management, 5*(03), 339-364.

Dietz, T., & Stern, P. C. (2008). *Public participation in environmental assessment and decision making*: National Academies Press.

Dillinger, W. (1994). Decentralization and its implications for urban service delivery. Urban Management Programme, The World Bank

Diringer, E. (2011). Climate policy: Letting go of Kyoto. *Nature, 479*(7373), 291-292.

Drew, C. H., & Nyerges, T. L. (2004). Transparency of environmental decision making: A case study of soil cleanup inside the Hanford 100 area. *Journal of Risk Research, 7*(1), 33-71.

Drew, C. H., Nyerges, T. L., & Leschine, T. M. (2004). Promoting transparency of long-term environmental decisions: the Hanford decision mapping system pilot project. *Risk Analysis: An International Journal, 24*(6), 1641-1664.

Driessen, P. P., Dieperink, C., van Laerhoven, F., Runhaar, H. A., & Vermeulen, W. J. (2012). Towards a conceptual framework for the study of shifts in modes of environmental governance–experiences from the Netherlands. *Environmental Policy and Governance, 22*(3), 143-160.

Dunne, D. (2019). The Carbon Brief Profile: Indonesia. [Accessed].

Ebbs, C. A. (1996). Qualitative research inquiry: Issues of power and ethics. *Education, 117*(2), 217-223.

Echeverria, J. D. (2000). No success like failure: The Platte River collaborative watershed planning process. *Wm. & Mary Envtl. L. & Pol'y Rev., 25*, 559.

Eden, S. (2016). Public participation in environmental policy: considering scientific, counter-scientific and non-scientific contributions. *Public Understanding of Science*.

Edwards, M., Halligan, J., Horrigan, B., & Nicoll, G. (2012). *Public sector governance in Australia*: ANU Press.

EGAT. (2020). EGAT Overview.

Eisenhardt, K. M. (1989). Building theories from case study research. *Academy of Management Review, 14*(4), 532-550.

El Fadel, M., Rachid, G., El-Samra, R., Boutros, G. B., & Hashisho, J. (2013). Knowledge management mapping and gap analysis in renewable energy: Towards a sustainable framework in developing countries. *Renewable and Sustainable Energy Reviews, 20*, 576-584.

Elahi, K. Q. I. (2009). UNDP on good governance. *International Journal of Social Economics*.

Emerson, K., & Nabatchi, T. (2015). *Collaborative governance regimes*: Georgetown University Press.

Emerson, K., Nabatchi, T., & Balogh, S. (2012). An integrative framework for collaborative governance. *Journal of Public Administration Research and Theory, 22*(1), 1-29.

Erb, M., & Sulistiyanto, P. (2009). *Deepening democracy in Indonesia?: direct elections for local leaders (Pilkada)*: Institute of Southeast Asian Studies.

Etzioni, A. (2016). Is transparency the best disinfectant? *Available at SSRN 2731880*.

Faguet, J.-P. (2014). Decentralization and governance. *World Development, 53*, 2-13.

Felber, C. (2019). *Change everything: Creating an economy for the common good*: Zed Books Ltd.

Filgueiras, F. (2018). Going beyond management: the agenda of democratic governance and the silenced change in Brazil. *RAP: Revista Brasileira de Administração Pública, 52*(1).

Finel, B. I., & Lord, K. M. (1999). The surprising logic of transparency. *International Studies Quarterly, 43*(2), 315-339.

Fiorino, D. J. (1990). Citizen participation and environmental risk: A survey of institutional mechanisms. *Science, Technology, & Human values, 15*(2), 226-243.

Fiorino, D. J. (2006). *The new environmental regulation*: MIT Press.

Florini, A. (1999). *Does the invisible hand need a transparent glove? The politics of transparency.* Paper presented at the Annual World Bank Conference on Development Economics.

Florini, A. (2007). Introduction: The battle over transparency. *The right to know: Transparency for an open world*, 1-16.

Florini, A., & Sovacool, B. K. (2009). Who governs energy? The challenges facing global energy governance. *Energy Policy, 37*(12), 5239-5248.

Flyvbjerg, B. (2011). Case Study. In Y. S. L. Norman K Denzin (Ed.), *The Sage handbook of qualitative research 4th edition*. Thousand Oaks, CA: Sage.

Fombrun, C. J., & Rindova, V. P. (2000). The road to transparency: Reputation management at Royal Dutch/Shell. *The expressive organization, 7*, 7-96.

Fournier, D. (2005). Evaluation. Encyclopedia of Evaluation, edited by S. Mathison. In: Thousand Oaks, California: Sage Publications.

Fukuyama, F. (2013). What is governance? *Governance, 26*(3), 347-368.

Fung, A. (2006). Varieties of participation in complex governance. *Public Administration Review, 66*, 66-75.

Fung, A. (2013). Infotopia: Unleashing the democratic power of transparency. *Politics and Society, 41*(2), 183-212.

Gailing, L., & Röhring, A. (2016). Is it all about collaborative governance? Alternative ways of understanding the success of energy regions. *Utilities Policy, 41*, 237-245.

Gascon, M., & McIntyre-Mills, J. (2018). Empowering Indigenous People: Voice, Choice and Agency in Rural Development Planning in Mindanao. In *Balancing Individualism and Collectivism* (pp. 319-386): Springer.

Gelders, D., & Brans, M. (2006). Arguments for and against communication about policy intentions. *International Public Management Journal, 8*(1), 154-167.

Germain, R. H., Floyd, D. W., & Stehman, S. V. (2001). Public perceptions of the USDA Forest Service public participation process. *Forest Policy and Economics, 3*(3-4), 113-124.

Giddings, B., Hopwood, B., & O'brien, G. (2002). Environment, economy and society: fitting them together into sustainable development. *Sustainable Development, 10*(4), 187-196.

Gismar, A. M., Loekman, I., Hidayat, L., Harjanto, N., Suharmawijaya, D. S., Sulistio, H., & Aritonang, R. N. (2013). Indonesia Governance Index 2012: Towards A Well-Informed Society and Responsive Government

Goede, M., & Neuwirth, R. J. (2014). Good governance and confidentiality: a matter of the preservation of the public sphere. *Corporate Governance*.

GoI. (2017). Presidential Regulation number 22 of 2017.

Golafshani, N. (2003). Understanding reliability and validity in qualitative research. *The Qualitative Report, 8*(4), 597-607.

Goldkuhl, G. (2012). Pragmatism vs interpretivism in qualitative information systems research. *European Journal of Information Systems, 21*(2), 135-146.

Goldthau, A. (2014). Rethinking the governance of energy infrastructure: Scale, decentralization and polycentrism. *Energy Research & Social Science, 1*, 134-140.

González, L. (2012). The redistributive effects of centralization and decentralization across subnational units. *Latin American Research Review*, 109-133.

Government of South Australia. (2015). *A Low Carbon Investment Plan For South Australia*. Adelaide.

Government of South Australia. (2019). *Discussion Paper on Proposed Changes to Renewable Energy Policy in The Planning and Design Code*. South Australia.

Greene, J. C. (2007). *Mixed methods in social inquiry* (Vol. 9): John Wiley & Sons.

Grimmelikhuijsen, S. (2012a). Linking transparency, knowledge and citizen trust in government: An experiment. *International Review of Administrative Sciences, 78*(1), 50-73.

Grimmelikhuijsen, S. (2012b). *Transparency and trust. An experimental study of online disclosure and trust in government.* University Utrecht,

Grimmelikhuijsen, S., Porumbescu, G., Hong, B., & Im, T. (2013). The effect of transparency on trust in government: A cross-national comparative experiment. *Public Administration Review, 73*(4), 575-586.

Grindle, M. (2012). Good governance: The inflation of an idea. *Planning ideas that matter*, 259-282.

Grindle, M. S. (2004). Good enough governance: poverty reduction and reform in developing countries. *Governance, 17*(4), 525-548.

Grindle, M. S. (2007). Good enough governance revisited. *Development Policy Review, 25*(5), 533-574.

Grindle, M. S., & Grindle, M. S. (2007). *Going local: decentralization, democratization, and the promise of good governance*: Princeton University Press.

Grunbaum, L. (2015). From Kyoto to Paris: How bottom-up regulation could revitalize the UNFCCC. *UCLA Journal of Environmental Law & Policy, Environmental Law Review Syndicate*.

Guba, E. G., & Lincoln, Y. S. (1994). Competing paradigms in qualitative research. *Handbook of qualitative research, 2*(163-194), 105.

Guild, J. (2020). The Political Economy of Thailand's Renewable Energy Ambitions. Retrieved from https://thediplomat.com/2020/12/the-political-economy-of-thailands-renewable-energy-ambitions/ [Accessed 29 March 2021].

Gunningham, N. (2012). Confronting the challenge of energy governance. *Transnational Environmental Law, 1*(1), 119-135.

Gunningham, N. (2013). Managing the energy trilemma: The case of Indonesia. *Energy Policy, 54*, 184-193.

Gupta, A. (2014). *Transparency in global environmental governance: Critical perspectives*: MIT Press.

Gupta, A., & Mason, M. (2014). A transparency turn in global environmental governance. *Transparency in Global Environmental Governance: Critical perspectives*, 3-38.

Gurría, A. (2020). Openness and Transparency - Pillars for Democracy, Trust and Progress. Retrieved from https://www.oecd.org/about/secretary-general/opennessandtransparency-pillarsfordemocracytrustandprogress.htm [Accessed December 2020].

Hall, D., Lobina, E., & Motte, R. d. l. (2005). Public resistance to privatisation in water and energy. *Development in Practice, 15*(3-4), 286-301.

Hall, D., Lobina, E., & Terhorst, P. (2013). Re-municipalisation in the early twenty-first century: water in France and energy in Germany. *International Review of Applied Economics, 27*(2), 193-214.

Hardin, G. (1968). The Tragedy of the Commons. *Journal of Natural Resources Policy Research, 1*(3), 243-253.

Hare, W., Stockwell, C., Flachsland, C., & Oberthür, S. (2010). The architecture of the global climate regime: a top-down perspective. *Climate Policy, 10*(6), 600-614.

Harrell, M. C., & Bradley, M. A. (2009). *Data collection methods. Semi-structured interviews and focus groups*. RAND National Defense Research Institute.

Harsono, D. (2018). A monarchy without a kingdom: Yogyakarta's exceptional system of government.

Heald, D. (2006). Transparency as an Instrumental Value. in C Hood (eds), Transparency: The Key to Better Governance, Oxford University Press, Oxford.

Heale, R., & Forbes, D. (2013). Understanding triangulation in research. *Evidence-based nursing, 16*(4), 98-98.

Helfrich, S. (2012). Common goods don't simply exist–they are created. *The Wealth of the Commons. A World Beyond Market and State*, 230-249.

Helm, D. (2012). The Kyoto approach has failed. *Nature, 491*(7426), 663-665.

Hess, C., & Ostrom, E. (2003). Ideas, artifacts, and facilities: information as a common-pool resource. *Law and Contemporary Problems, 66*(1/2), 111-145.

Hodge, G. A. (2002). Privatisation: Lessons from the war. *Alternative Law Journal, 27*(4), 177-183.

Holloway, I., & Galvin, K. (2016). *Qualitative research in nursing and healthcare*: John Wiley & Sons.

Homsy, G. C., Liu, Z., & Warner, M. E. (2019). Multilevel governance: Framing the integration of top-down and bottom-up policymaking. *International Journal of Public Administration, 42*(7), 572-582.

Hood, C. (2001). Transparency. In P. B. Clarke & J. Foweraker (Eds.), *Encyclopedia of Democratic Thought*. London: Routledge.

Hood, C., & Heald, D. (2006). *Transparency: The key to better governance?* (Vol. 135): Oxford University Press for The British Academy.

Hosseini, M., Shahri, A., Phalp, K., & Ali, R. (2018). Four reference models for transparency requirements in information systems. *Requirements Engineering, 23*(2), 251-275.

Huxham, C., & Vangen, S. (2013). *Managing to collaborate: The theory and practice of collaborative advantage*: Routledge.

Hysing, E. (2009). From government to governance? A comparison of environmental governing in Swedish forestry and transport. *Governance, 22*(4), 647-672.

IEA. (2018). Coal 2018. Retrieved from https://www.iea.org/reports/coal-2018 [Accessed November 2020 2020].

IMF. (1997). Good Governance: The IMF's Role.

Indonesia Investment. (2016). Natural Gas in Indonesia. Retrieved from https://www.indonesia-investments.com/business/commodities/natural-gas/item184 [Accessed].

Inhouse community. (2016). The 35000 MW programme: overview of the programme's structures, challenges and mitigation. Retrieved from https://www.inhousecommunity.com/article/the-35000-mw-programme-overview-of-the-programmes-structures-challenges-and-mitigation/ [Accessed 25 November 2019].

Innes, J. E., & Booher, D. E. (1999). Consensus building and complex adaptive systems: A framework for evaluating collaborative planning. *Journal of the American Planning Association, 65*(4), 412-423.

Innes, J. E., & Booher, D. E. (2004). Reframing public participation: strategies for the 21st century. *Planning Theory & Practice, 5*(4), 419-436.

International Renewable Energy Agency, I. (2017). Renewable Energy Prospects: Indonesia, a REmap analysis. *International Renewable Energy Agency*.

IPCC. (2014). Climate Change 2014 Synthesis Report.

IPCC. (2018). Global Warming of 1.5° C.

Irvin, R. A., & Stansbury, J. (2004). Citizen participation in decision making: is it worth the effort? *Public Administration Review, 64*(1), 55-65.

Jacobs, D. (2012). The German Energiewende–history, targets, policies and challenges. *Renewable Energy Law and Policy Review*, 223-233.

Jakarta Post. (2017). Renewable energy development ruling is setback: Expert.

Jami, A. A., & Walsh, P. R. (2014). The role of public participation in identifying stakeholder synergies in wind power project development: The case study of Ontario, Canada. *Renewable Energy, 68*, 194-202.

Jang, Y. S., Cho, M., & Drori, G. S. (2014). National transparency: Global trends and national variations. *International Journal of Comparative Sociology, 55*(2), 95-118.

Johansson, J. (2018). Collaborative governance for sustainable forestry in the emerging bio-based economy in Europe. *Current Opinion in Environmental Sustainability, 32*, 9-16.

Johnson, T. (2020). Public participation in China's EIA process and the regulation of environmental disputes. *Environmental Impact Assessment Review, 81*, 106359.

Joshi, K. (2020). 2020 was a stunning year for German renewables, and a killer one for coal. Retrieved from https://reneweconomy.com.au/2020-was-a-stunning-year-for-german-renewables-and-a-killer-one-for-coal-12069/ [Accessed 20 April 2021].

Katadata. (2017). Kalkulasi Ulang Kelebihan Pasokan Listrik. [Accessed].

Kaufmann, D., Kraay, A., & Mastruzzi, M. (2008). *Governance matters VII: aggregate and individual governance indicators 1996-2007*: The World Bank.

Kemitraan. (2013). Indonesia Governance Index 201: Tantangan Tata Kelola Pemerintahan di 33 Provinsi.

King, N. (2004). 21——Using Templates in the Thematic Analysis ofText——. *Essential guide to qualitative methods in organizational research*, 256.

Kjaer, A. M. (2004). *Governance*. Cambridge, UK: Polity Press.

Koebele, E. A. (2019). Policy learning in collaborative environmental governance processes. *Journal of Environmental Policy & Planning, 21*(3), 242-256.

Kolstad, I., & Wiig, A. (2009). Is Transparency the Key to Reducing Corruption in Resource-Rich Countries? *World Development, 37*(3), 521-532. doi:https://doi.org/10.1016/j.worlddev.2008.07.002

Kooiman, J. (1999). Social-political governance: overview, reflections and design. *Public Management an International Journal of Research and Theory, 1*(1), 67-92.

Kosack, S., & Fung, A. (2014). Does transparency improve governance? *Annual Review of Political Science, 17*, 65-87.

KPPOD, K. P. P. O. D. (2011). Local economic governance: A survey of business operators in 245 districts/municipalities in Indonesia, 2011. In: Jakarta, Indonesia: Komite Pemantauan Pelaksanaan Otonomi Daerah.

Kristiansen, S., Dwiyanto, A., Pramusinto, A., & Putranto, E. A. (2009). Public sector reforms and financial transparency: Experiences from Indonesian districts. *Contemporary Southeast Asia*, 64-87.

Kunchornrat, J., & Phdungsilp, A. (2012). Multi-level governance of low-Carbon energy systems in Thailand. *Energies, 5*(3), 531-544.

Kusdiana, D. (2014). Bioenergy Policies and Regulation in Indonesia.

Kustiningsih, W. (2012). *TRANSFER PENGETAHUAN, INTERAKSI SOSIAL, DAN EFEKTIVITAS KERJA-KERJA JEJARING ORGANISASI MASYARAKAT SIPIL (OMS) DI YOGYAKARTA.* [Yogyakarta]: Universitas Gadjah Mada,

Kvale, S. (1996). *Interviews: An introduction to qualitative research interviewing*: Sage.

Langer, K., Decker, T., & Menrad, K. (2017). Public participation in wind energy projects located in Germany: Which form of participation is the key to acceptance? *Renewable Energy, 112*, 63-73.

Lasker, R. D., Weiss, E. S., & Miller, R. (2001). Partnership synergy: a practical framework for studying and strengthening the collaborative advantage. *The Milbank Quarterly, 79*(2), 179-205.

Lebo, F. B. (2019). Evaluating a collaborative governance regime in renewable energy: Wind power and the Lake Erie Energy Development Corporation (LEEDCo). *Environmental Development, 32*, 100449.

Leung, L. (2015). Validity, reliability, and generalizability in qualitative research. *Journal of Family Medicine and Primary Care, 4*(3), 324.

Levi-Faur, D. (2012). *The Oxford handbook of governance*: Oxford University Press.

Levy, B. (2015). Governance reform: Getting the fit right. *Public Administration and Development, 35*(4), 238-249.

Lewis, B. D. (2005). Indonesian Local Government Spending, Taxing and Saving: An Explanation of Pre-and Post-decentralization Fiscal Outcomes. *Asian Economic Journal, 19*(3), 291-317.

Lewis, J., Ritchie, J., & Ormston, R. (2003). Generalising from qualitative research. *Qualitative research practice: A guide for social science students and researchers, 2*, 347-362.

Leys, C., & Harriss-White, B. (2012). Commodification: The essence of our time. *Open Democracy, 2*.

Lilies, S., Darsono, & Lukman, H. (2017). Scenario Analysis of Energy Demand as a Basis for Energy Efficiency Policies: A Case in Yogyakarta, Indonesia

Lubell, M., Leach, W. D., & Sabatier, P. A. (2009). Collaborative watershed partnerships in the epoch of sustainability. *Toward sustainable communities: Transitions and transformations in environmental policy*, 255-288.

Lynn Jr, L. E. (2012). The many faces of governance: adaptation? Transformation? Both? Neither? In *The Oxford handbook of governance*.

MacArthur, J. L. (2016). Challenging public engagement: participation, deliberation and power in renewable energy policy. *Journal of Environmental Studies and Sciences, 6*(3), 631-640.

Malik, K. (2013). Human development report 2013. The rise of the South: Human progress in a diverse world. *The Rise of the South: Human Progress in a Diverse World (March 15, 2013). UNDP-HDRO Human Development Reports*.

Mann, S., & Gennaio, M.-P. (2010). The central role of centralisation in environmental policy initialisation. *Journal of Environmental Planning and Management, 53*(3), 283-295.

Marella, M. R. (2017). The Commons as a Legal Concept. *Law and Critique, 28*(1), 61-86.

Marquardt, J. (2014). A struggle of multi-level governance: promoting renewable energy in Indonesia. *Energy Procedia, 58*, 87-94.

Martinez-Vazquez, J., & McNab, R. M. (2003). Fiscal decentralization and economic growth. *World Development, 31*(9), 1597-1616.

Maulidia, M. (2019). Enhancing the role of the private sector in achieving transitional renewable energy targets in Indonesia. A thesis. the University of Queensland.

Maulidia, M., Dargusch, P., Ashworth, P., & Ardiansyah, F. (2019). Rethinking renewable energy targets and electricity sector reform in Indonesia: a private sector perspective. *Renewable and Sustainable Energy Reviews, 101*, 231-247.

Maulidia, M., Dargusch, P., Ashworth, P., & Wicaksono, A. (2019). Sidrap: A Study of the Factors That Led to the Development of Indonesia's First Large-Scale Wind Farm. *Case Studies in the Environment*.

Max-Neef, M. A. (1992). *From the outside looking in: experiences in'barefoot economics'*: Zed Books Ltd.

Maxwell, J. A. (2008). Designing a qualitative study. *The SAGE handbook of applied social research methods, 2*, 214-253.

McGreevy, M., & Baum, F. (2021). Against the odds, South Australia is a renewable energy powerhouse. How on Earth did they do it? Retrieved from https://theconversation.com/against-the-odds-south-australia-is-a-renewable-energy-powerhouse-how-on-earth-did-they-do-it-153789#:~:text=South%20Australia%20is%20a%20dry,26%25%20renewables%20generation%20by%202020. [Accessed 2 March 2021].

McGreevy, M., MacDougall, C., Fisher, M., Henley, M., & Baum, F. (2021). Expediting a renewable energy transition in a privatised market via public policy: The case of south Australia 2004-18. *Energy Policy, 148*, 111940.

McIntyre-Mills, J. (2014). *Transformation from Wall Street to Wellbeing: Joining Up the Dots Through Participatory Democracy and Governance to Mitigate the Causes and Adapt to the Effects of Climate Change*: Springer.

McIntyre-Mills, J. (2017). *Planetary Passport: Re-presentation, Accountability and Re-Generation*: Springer.

McNutt, P. (1999). Public goods and club goods. *Encyclopedia of Law and Economics, 1*, 927-951.

Meijer, A., 't Hart, P., & Worthy, B. (2018). Assessing government transparency: an interpretive framework. *Administration and Society, 50*(4), 501-526.

MEMR. (2016). Statistik ketenagalistrikan 2015. *Jakarta: Direktorat Jenderal Ketenagalistrikan*.

MEMR. (2019a). Handbook of Energy and Economic Statistics of Indonesia 2018.

MEMR. (2019b). Statistik Ketenagalistrikan 2018.

Mendonça, M. (2009). *Feed-in tariffs: accelerating the deployment of renewable energy*: Routledge.

Merriam, S. B. (1998). *Qualitative Research and Case Study Applications in Education. Revised and Expanded from" Case Study Research in Education."*: ERIC.

Michener, G., & Bersch, K. (2013). Identifying transparency. *Information Polity, 18*(3), 233-242.

Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook*: sage.

Ministry of Environment and Forestry. (2018). Indonesia Second Biennial Update Report

Mitchell, B. (2005). Participatory partnerships: Engaging and empowering to enhance environmental management and quality of life? In *Quality-of-Life Research in Chinese, Western and Global Contexts* (pp. 123-144): Springer.

Modi, A., & Lackovic, M. (2021, 15 March 2021). Investment and innovation in Thai renewable energy. *Bangkok Post*. Retrieved from

https://www.bangkokpost.com/business/2083795/investment-and-innovation-in-thai-renewable-energy

MoF. (2019). *Book II: Financial Note and State Budget 2019*.

Mokrosinska, D. (2018). The people's right to know and state secrecy. *Canadian Journal of Law & Jurisprudence, 31*(1), 87-106.

Mongabay. (2017). Ketika Warga di Solok Protes Pembangunan Pembangkit Panas Bumi, Mengapa? Retrieved from http://www.mongabay.co.id/2017/09/30/ketika-warga-di-solok-protes-pembagunan-pembangkit-panas-bumi-mengapa/ [Accessed 7 May 2018].

Monstadt, J., & Scheiner, S. (2014). Allocating greenhouse gas emissions in the German federal system: Regional interests and federal climate governance. *Energy Policy, 74*, 383-394.

Morgan, D. L. (2007). Paradigms lost and pragmatism regained: Methodological implications of combining qualitative and quantitative methods. *Journal of Mixed Methods Research, 1*(1), 48-76.

Morgan, S. J., Pullon, S. R., Macdonald, L. M., McKinlay, E. M., & Gray, B. V. (2017). Case study observational research: A framework for conducting case study research where observation data are the focus. *Qualitative Health Research, 27*(7), 1060-1068.

Munsyarif. (2013). MENUJU KEPASTIAN HUKUM ATAS TANAH: KASULTANAN DAN PAKUALAMAN DI DAERAH ISTIMEWA YOGYAKARTA.

Musante, K., & DeWalt, B. R. (2010). *Participant observation: A guide for fieldworkers*: Rowman Altamira.

Nasirov, S., Silva, C., & Agostini, C. A. (2015). Investors' perspectives on barriers to the deployment of renewable energy sources in Chile. *Energies, 8*(5), 3794-3814.

National Energy Council. (2017). Indonesia Energy Outlook 2017.

Neuman, L. W. (2007). *Social research methods, 6/E*: Pearson Education India.

Neuman, W. L., & Robson, K. (2007). Basics of social research: Qualitative and quantitative approaches. *Power, 48*, 48.

Newig, J., Challies, E., Jager, N. W., Kochskaemper, E., & Adzersen, A. (2018). The environmental performance of participatory and collaborative governance: A framework of causal mechanisms. *Policy Studies Journal, 46*(2), 269-297.

Nowell, L. S., Norris, J. M., White, D. E., & Moules, N. J. (2017). Thematic analysis: Striving to meet the trustworthiness criteria. *International Journal of Qualitative Methods, 16*(1), 1609406917733847.

Nugraha, D. B., & Yusgiantoro, F. C. (2021). Indonesia lags on renewable energy, and pays the price. Retrieved from https://www.lowyinstitute.org/the-interpreter/indonesia-lags-renewable-energy-and-pays-price [Accessed 29 March 2021].

Nussbaum, M. C. (2011). *Creating capabilities*: Harvard University Press.

O'Faircheallaigh, C. (2010). Public participation and environmental impact assessment: Purposes, implications, and lessons for public policy making. *Environmental Impact Assessment Review, 30*(1), 19-27.

O'leary, R. (1999). Managing for the Environment Understanding the Legal, Organizational, and Policy Challenges.

O'Neill, B. (2021). Average Electricity Costs per kWh. Retrieved from https://www.canstarblue.com.au/electricity/electricity-costs-kwh/ [Accessed 29 March 2021].

O. Nyumba, T., Wilson, K., Derrick, C. J., & Mukherjee, N. (2018). The use of focus group discussion methodology: Insights from two decades of application in conservation. *Methods in Ecology and Evolution, 9*(1), 20-32.

OECD. (1995). Participatory Development and Good Governance. Development Cooperation Guideline Series. In: OECD DAC. Paris.

OECD. (2018). OECD Economic Surveys Indonesia.

OECD. (2020). Decentralisation and Regionalisation in Portugal: What Reform Scenarios? (OECD Multi-level Governance Studies).

Oels, A. (2009). The power of visioning: the contribution of future search conferences to decision-making in local Agenda 21 processes. In *Public Participation and Better Environmental Decisions* (pp. 73-88): Springer.

Ohlhorst, D. (2015). Germany's energy transition policy between national targets and decentralized responsibilities. *Journal of Integrative Environmental Sciences, 12*(4), 303-322.

Osborne, S. P. (2010). *The new public governance: Emerging perspectives on the theory and practice of public governance*: Routledge.

Ostrom, E. (1990). Governing the commons: the evolution of institutions for collective action. In: Cambridge: Cambridge University Press.

Pansiri, J. (2005). Pragmatism: A methodological approach to researching strategic alliances in tourism. *Tourism and Hospitality Planning & Development, 2*(3), 191-206.

Park, H., & Blenkinsopp, J. (2017). Transparency is in the eye of the beholder: the effects of identity and negative perceptions on ratings of transparency via surveys. *International Review of Administrative Sciences, 83*(1_suppl), 177-194.

Parkinson, G. (2019). South Australia's stunning aim to be "net" 100 per cent renewables by 2030. Retrieved from https://reneweconomy.com.au/south-australias-stunning-aim-to-be-net-100-per-cent-renewables-by-2030/ [Accessed 29 March 2021].

Patton, M. (2002). Qualitative research and evaluation methods. Thousand Oaks, Calif: Sage Publications.

Patton, M. Q. (1999). Enhancing the quality and credibility of qualitative analysis. *Health Services Research, 34*(5 Pt 2), 1189.

Patton, M. Q. (2008). *Utilization-focused evaluation*: Sage publications.

Patunru, A. A., McCulloch, N., & von Luebke, C. (2012). A tale of Two Cities: The political economy of local investment climates in Indonesia. *Journal of Development Studies, 48*(7), 799-816.

Paysan, J. (2012). My rocky road to the Commons. *The wealth of the commons: A world beyond market and state*.

Petkova, E., Maurer, C., Henninger, N., Irwin, F., Coyle, J., & Hoff, G. (2002). Closing the gap: Information, participation and justice in decision-making for the environment. World Resources Institute

Petts, J. (2009). *Handbook of Environmental Impact Assessment: Volume 2: Impact and Limitations* (Vol. 2): John Wiley & Sons.

Phoumin, H., Kimura, S., Wongsapai, W., & Achawangku, Y. (2019). Biomass Supply Chain for Power Generation in Southern Part of Thailand.

Pierre, J., & Peters, B. G. (2019). *Governance, politics and the state*: Red Globe Press.

Plummer, J., & Tritt, G. (2012). *Voice, choice and decision: A study of local governance processes in Cambodia*: World Bank.

Polit, D. F., & Beck, C. T. (2008). *Nursing research: Generating and assessing evidence for nursing practice*: Lippincott Williams & Wilkins.

Pollitt, C., & Bouckaert, G. (2004). *Public management reform: A comparative analysis*: Oxford University Press, USA.

Porumbescu, G. (2017). Linking transparency to trust in government and voice. *The American Review of Public Administration, 47*(5), 520-537.

Pratama, A. N. (2019). Hari Ini dalam Sejarah, Perjanjian Giyanti Memecah Wilayah Mataram Islam. Retrieved from https://nasional.kompas.com/read/2019/02/13/13035281/hari-ini-dalam-sejarah-perjanjian-giyanti-memecah-wilayah-mataram-islam?page=all

Presidential Regulation Number 22 (Appendix). (2017). National Energy General Plan.

Pretty, J. N. (1995). Participatory learning for sustainable agriculture. *World Development, 23*(8), 1247-1263.

PricewaterhouseCoopers. (2016). *A foot in the past and an eye to the future. The importance of forward-looking information in company reporting*. Retrieved from https://integratedreporting.org/wp-content/uploads/2017/01/forward-looking-guide-2016.pdf

Puspa, A. W. (2019). Renewable Energy Development: Large potential of solar power underoptimised. Retrieved from https://www.pwc.com/id/en/media-centre/infrastructure-news/march-2019/large-potential-of-solar-power-underoptimised.html [Accessed 22 November 2019].

PwC. (2017). Power in Indonesia: Investment and taxation guide.

Rachmi, A., Wattimena, B., Nisa, C., Sari, I., & Herliana, L. (2005). ELECTRICITY GOVERNANCE INITIATIVE: CASE OF INDONESIA.

Ran, B. (2012). Evaluating public participation in environmental policy-making. *Journal of US-China Public Administration, 9*(4), 407-423.

Rana, S., & Marwasta, D. (2015). Urbanisation trends in developing countries: comparative study of Yogyakarta City and Kathmandu Valley. Journal of Natural Resources and Development*, 5*, 29-36.

Rawlins, B. (2008). Give the emperor a mirror: Toward developing a stakeholder measurement of organizational transparency. *Journal of Public Relations Research, 21*(1), 71-99.

REN21. (2019). RENEWABLES 2019 GLOBAL STATUS REPORT.

Renn, O., & Marshall, J. P. (2016). Coal, nuclear and renewable energy policies in Germany: From the 1950s to the "Energiewende". *Energy Policy, 99*, 224-232.

Renn, O., Webler, T., & Wiedemann, P. (2013). *Fairness and competence in citizen participation: Evaluating models for environmental discourse* (Vol. 10): Springer Science & Business Media.

Rhodes, R. A. (2012). Waves of governance. In *The Oxford handbook of governance*.

Richardson, W. C., & Allegrante, J. P. (2000). Shaping the future of health through global partnerships. *Critical issues in global health*, 375-383.

Ritchie, J., Lewis, J., Nicholls, C. M., & Ormston, R. (2013). *Qualitative research practice: A guide for social science students and researchers*: sage.

Roberts, R. (1995). Public involvement: from consultation to participation. *Environmental and Social Impact Assessment, 10*, 221-245.

Rondinelli, D. (1999). What Is Decentralization? In J. I. Litvack & J. Seddon (Eds.), *Decentralization briefing notes*: World Bank Institute Washington, DC.

Rosser, A., & Sulistiyanto, P. (2013). The politics of universal free basic education in decentralized Indonesia: Insights from Yogyakarta. *Pacific Affairs, 86*(3), 539-560.

Rothstein, B. (2012). Good governance. In *The Oxford handbook of governance*.

Rowe, G., & Frewer, L. J. (2000). Public participation methods: a framework for evaluation. *Science, Technology, & Human Values, 25*(1), 3-29.

Rowe, G., & Frewer, L. J. (2004). Evaluating public-participation exercises: a research agenda. *Science, Technology, & Human Values, 29*(4), 512-556.

RRI. (2017). *799 ormas di DIY, Saatnya Bergerak bersama Gelorakan Pancasila*. Retrieved from https://www.rri.co.id/yogyakarta/post/berita/465835/ekonomi/799_ormas_di_diy_saatnya_bergerak_bersama_gelorakan_pancasila.html

Rumbach, A. (2016). Decentralization and small cities: Towards more effective urban disaster governance? *Habitat International, 52*, 35-42.

Saldaña, J. (2015). *The coding manual for qualitative researchers*: Sage.

Samuelson, P. A. (1954). The pure theory of public expenditure. *The Review of Economics and Statistics*, 387-389.

Santoso, D. (2015). Linguistic politeness strategies in Javanese political discourse. *Bundoora: La Trobe University*.

Sarantakos, S. (1998). *Social research*: Palgrave Macmillan.

Savas, E. S. (1987). *Privatization: The key to better government*: Chatham House Pub.

Sawin, J. L., Sverrisson, F., Seyboth, K., Adib, R., Murdock, H., & Lins, C. (2014). Renewables 2014 global status report. *Paris: REN21 Secretariat REN21*.

Schlossberg, M., & Shuford, E. (2005). Delineating" public" and" participation" in PPGIS.

Schonfeld, R. (2010). Thailand's Solar Lessons for the World. Retrieved from https://www.renewableenergyworld.com/baseload/thailand-welcomes-solar-capacity/#gref [Accessed 15 January 2021].

Scott, C. R. (2005). Anonymity in applied communication research: Tensions between IRBs, researchers, and human subjects. *Journal of Applied Communication Research, 33*(3), 242-257.

Scriven, M. (1991). *Evaluation thesaurus*: SAGE Publications.

Sen, A. (1993). Capability and Well-being. *The quality of life, 30*. Clarendon Press.

Sen, A. (1999). Development as freedom *Roberts, JT, Hite, AB & Chorev, N. The Globalization and Development Reader: Perspectives on Development and Global Change, 2*, 525-547.

Sharma, A. (2013). State transparency after the neoliberal turn: The politics, limits, and paradoxes of India's right to information law. *PoLAR: Political and Legal Anthropology Review, 36*(2), 308-325.

Shepherd, T. (2014). ETSA sale cost South Australia $2b as prices soar, says damning report on privatisation. Retrieved from http://www.adelaidenow.com.au/etsa-sale-cost-south-australia-2b-as-prices-soar-says-damning-report-on-privatisation/news-story/ef12c38b5a68c5570cb40656efb62951 [Accessed 25 January 2018].

Siddiquee, N. A., & Xavier, J. A. (2020). Collaborative approach to public service improvement: the Malaysian experience and lessons. *International Journal of Public Sector Management*.

Silka, L. (1999). Paradoxes of partnerships: Reflections on university-community collaborations. *Research in Politics and Society, 7*, 335-359.

Sirasoontorn, P., & Koomsup, P. (2017). *Energy transition in Thailand: Challenges and opportunities*: Friedrich-Ebert-Stiftung Thailand Office.

Slezak, M., & Murphy, K. (2017). NSW could face power shortages as temperature rises on energy policy. Retrieved from https://www.theguardian.com/australia-news/2017/feb/09/nsw-power-shortage-warning-after-revelation-sa-blackouts-forecast-hours-beforehand [Accessed 29 March 2021].

Snider, J. (2010). Deterring Fake Public Participation. *International Journal of Public Participation, 4*(1).

Sopher, P. (2015). Lessons Learned from Germany's Energiewende: The Political, Governance, Economic, Grid Reliability, and Grid Optimization Bedrock for a Transition to Renewables. *Renewable Energy Law and Policy Review, 6*(2), 99-112.

Sovacool, B. K. (2011). An international comparison of four polycentric approaches to climate and energy governance. *Energy Policy, 39*(6), 3832-3844.

Sovacool, B. K., Sidortsov, R. V., & Jones, B. R. (2013). *Energy security, equality and justice*: Routledge.

Spencer, L., Ritchie, J., & O'Connor, W. (2003). Analysis: practices, principles and processes. *Qualitative research practice: A guide for social science students and researchers, 199*, 218.

Stake, R. E. (1995). *The art of case study research*: SAGE Publications.

Steffen, W., Persson, Å., Deutsch, L., Zalasiewicz, J., Williams, M., Richardson, K., Gordon, L. (2011). The Anthropocene: From global change to planetary stewardship. *Ambio, 40*(7), 739.

Steffen, W., Sanderson, A., Tyson, P., Jäger, J., Matson, P., Moore, B., Turner, B. (2005). The Anthropocene era: How humans are changing the Earth system. *Global Change and the Earth System: A Planet Under Pressure*, 81-141.

Steg, L., Perlaviciute, G., & van der Werff, E. (2015). Understanding the human dimensions of a sustainable energy transition. *Frontiers in Psychology, 6*.

Stenbacka, C. (2001). Qualitative research requires quality concepts of its own. *Management Decision*.

Stiglitz, J. E., Sen, A., & Fitoussi, J.-P. (2010). *Mismeasuring our lives: Why GDP doesn't add up*: The New Press.

Stoker, G. (1998). Governance as theory: five propositions. *International Social Science Journal, 50*(155), 17-28.

Strobl, J., & Bruce, N. (2000). Achieving wider participation in strategic health planning: experience from the consultation phase of Liverpool's 'City Health Plan'. *Health Promotion International, 15*(3), 215-225.

Sugiyono, A. (2010). *Pengembangan Energi Alternatif di Derah Istimewa Yogyakarta: Prospek Jangka Panjang.* Paper presented at the Proceeding Call for Paper Seminar Nasional VI Universitas Teknologi Yogyakarta.

Tashakkori, A., Teddlie, C., & Teddlie, C. B. (2008). *Mixed methodology: Combining qualitative and quantitative approaches*: Sage.

Tempo. (2015). Jalan Berkelok Sang Dorodjatun. https://majalah.tempo.co/read/laporan-utama/148808/jalan-berkelok-sang-dorodjatun

The Australia Institute. (2019). SA Voters Reject Privatisation, Believe it Caused Energy Price Rises. Retrieved from https://australiainstitute.org.au/post/sa-voters-reject-privatisation-believe-it-caused-energy-price-rises/ [Accessed].

The Globe Asia. (2018). 150 Richest Indonesians. *The Globe Asia*.

The United Nations. (2016). *Transforming our world: The 2030 agenda for sustainable development*.

Thurston, W. E., MacKean, G., Vollman, A., Casebeer, A., Weber, M., Maloff, B., & Bader, J. (2005). Public participation in regional health policy: a theoretical framework. *Health Policy, 73*(3), 237-252.

Treib, O., Bähr, H., & Falkner, G. (2007). Modes of governance: towards a conceptual clarification. *Journal of European Public Policy, 14*(1), 1-20.

Uittenbroek, C. J., Mees, H. L., Hegger, D. L., & Driessen, P. P. (2019). The design of public participation: who participates, when and how? Insights in climate adaptation planning from the Netherlands. *Journal of Environmental Planning and Management, 62*(14), 2529-2547.

UNDP. (1997). Governance for sustainable human development – a UNDP policy document.

UNDP. (2011). Towards Human Resilience: Sustaining MDG Progress in an Age of Economic Uncertainty. In: United Nations Development Programme (UNDP) New York.

UNDP. (2013). Human Development Report 2013. *United Nations Development Programme, ISBN*, 978-992.

United Nations. (1948). Universal declaration of human rights. *UN General Assembly, 302*(2).

Valkenburg, G., & Cotella, G. (2016). Governance of energy transitions: about inclusion and closure in complex sociotechnical problems. *Energy, Sustainability and Society, 6*(1), 20.

van Ast, J. A., & Boot, S. P. (2003). Participation in European water policy. *Physics and Chemistry of the Earth, Parts A/B/C, 28*(12-13), 555-562.

Wagner, O., & Berlo, K. (2017). Remunicipalisation and foundation of municipal utilities in the German energy sector: details about newly established enterprises. *Journal of Sustainable Development of Energy, Water and Environment Systems, 5*(3), 396-407.

Wanna, J. (2008). Collaborative government: meanings, dimensions, drivers and outcomes. *Collaborative governance: a new era of public policy in Australia*, 3-12. ANU ePress.

Warren, B., Christoff, P., & Green, D. (2016). Australia's sustainable energy transition: the disjointed politics of decarbonisation. *Environmental Innovation and Societal Transitions, 21*, 1-12.

Wati, R. (2014). The Effect of Cultural Ewuh Pakewuh Bureaucracy Toward Significance Accounting Fraudulency in the Government: The Perception of Government Internal Control Apparatus Sragen Area Inspectorate.

Weatherill, J. (2018). South Australia's journey to a renewable energy future. Retrieved from https://www.youtube.com/watch?v=hmUW10t9G3c [Accessed].

Webler, T. (1995). "Right" discourse in citizen participation: an evaluative yardstick. In *Fairness and competence in citizen participation* (pp. 35-86): Springer.

Webler, T., & Tuler, S. (2001). Public participation in watershed management planning: views on process from people in the field. *Human Ecology Review*, 29-39.

Weinrub, A., & Giancatarino, A. (2015). Toward a climate justice energy platform: democratizing our energy future. In: Oakland, CA: Local Clean Energy Alliance. http://www. localcleanenergy. org/files/Climate Justice Energy Platform. pdf.

Weiss, T. G. (2000). Governance, good governance and global governance: conceptual and actual challenges. *Third World Quarterly, 21*(5), 795-814.

Whelan, T. J. (2007). *Anonymity and confidentiality: Do survey respondents know the difference.* Paper presented at the Poster presented at the 30th annual meeting of the Society of Southeastern Social Psychologists, Durham, NC.

Wilcox, J. (2012). Indonesia's Energy Transit: Struggle to Realize Renewable Potential. Retrieved from http://www.renewableenergyworld.com/articles/print/volume-15/issue-5/solar-energy/indonesias-energy-transit.html [Accessed 27 March 2018 2018].

Wolcott, H. F. (1994). *Transforming qualitative data: Description, analysis, and interpretation*: Sage.

Working Group. (1998). *Report of the Working Group on Transparency and Accountability*. Retrieved from Washington DC

World Bank. (1989). *Sub-Saharan Africa: From Crisis to Sustainable Growth: Along-term Perspective Study*: World Bank.

World Bank. (1994). Governance, The World Bank's Experience.

World Bank. (1996). *The World Bank participation sourcebook (English).* Retrieved from Washington, D.C: http://documents.worldbank.org/curated/en/289471468741587739/The-World-Bank-participation-sourcebook

World Bank. (2008). *Decentralization in Client Countries: An Evaluation of the World Bank Support: 1990-2007*: The World Bank.

World Bank. (2018). *World Development Indicators*. GDP Growth. Retrieved from: https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?end=2016&locations=ID&start=2000&year_high_desc=true

World Bank. (2019). Transparency is Key to Weathering Shocks, Investing in Growth, and Enhancing Trust in Government. Retrieved from https://www.worldbank.org/en/news/press-release/2020/04/09/transparency-is-key-to-weathering-shocks-investing-in-growth-and-enhancing-trust-in-government [Accessed December 2020].

Yang, K., & Holzer, M. (2006). The performance–trust link: Implications for performance measurement. *Public Administration Review, 66*(1), 114-126.

Yanuardy, D. (2012). Commoning, dispossession projects and resistance: A Land dispossession project for sand iron mining in Yogyakarta, Indonesia. *Makalah dipresentasikan di Global Land Grabbing II, Universitas Cornell*.

Yin, R. K. (2018). *Case study research and applications: Design and methods* (6th ed.). Los Angeles: Sage publications.

Zein, M. (2019). Walhi Soroti Proyek PLTU di Jabar. Retrieved from https://bandungkita.id/2019/07/26/walhi-soroti-proyek-pltu-di-jabar-mulai-dari-isu-lingkungan-kesejahteraan-masyarakat-hingga-aroma-dugaan-korupsi/ [Accessed 26 November 2019 2019].

APPENDICES

8.5 Appendix 1: Ethics Approval

7831 SBREC Final approval notice (12 February 2018)

Human Research Ethics

Mon 12/02/2018 15:00

To:Fajar Fadli <fadl0003@flinders.edu.au>; Janet McIntyre <janet.mcintyre@flinders.edu.au>; Noore Siddiquee <noore.siddiquee@flinders.edu.au>;

Importance: High

Dear Fajar,

The Chair of the Social and Behavioural Research Ethics Committee (SBREC) at Flinders University considered your response to conditional approval out of session and your project has now been granted final ethics approval. This means that you now have approval to commence your research. Your ethics final approval notice can be found below.

FINAL APPROVAL NOTICE

Project No.:	7831
Project Title:	A Case Study of Renewable Energy Development in Indonesia: Towards a Zero Carbon Future in line with UN Sustainable Development Goals in Jakarta
Principal Researcher:	Mr Fajar Fadli
Email:	fadl0003@flinders.edu.au
Approval Date:	12 February 2018
Ethics Approval Expiry Date:	1 May 2022

The above proposed project has been approved on the basis of the information contained in the application, its attachments and the information subsequently provided with the addition of the following comment(s):

Additional information required following commencement of research:

Permissions

Please ensure that copies of the correspondence granting permission to conduct the research from the HOD/CEO of organisations/ agencies outlined in the application are submitted to the Committee *on receipt*. Please ensure that the SBREC project number is included in the subject line of any permission emails forwarded to the Committee. Please note that data collection should not commence until the researcher has received the relevant permissions (item D8 and Conditional approval response – number 14).

8.6 Appendix 2: Letter of Introduction

College of Business,
Government and Law
Faculty of Social and
Behavioural Sciences
GPO Box 2100
Adelaide, SA 5001

LETTER OF INTRODUCTION

Adelaide, May 2018

Dear Sir/Madam,

This letter is to introduce Fajar Fadli who is a PhD student in the College of Business, Government and Law at Flinders University. He will produce his student card, which carries a photograph, as proof of identity.

Fajar is undertaking research leading to the production of a thesis and other publications on the subject of "sustainable energy across the public, private and volunteer sectors." The thesis explores low carbon living and sustainable energy take up in Yogyakarta, in terms of social, economic and environmental challenges.

He would be most grateful if you would volunteer to assist in this project, by kindly granting an interview, which explores certain aspects of this topic. No more than one to two hours of your time on one occasion would be required. Be assured that any information provided will be treated in the strictest confidence and none of the participants will be individually identifiable in the resulting thesis, report or other publications. You are of course, entirely free to discontinue your participation at any time or to decline to answer particular questions.

He will seek your consent, before undertaking the research and in preparing the thesis, report or other publications, on condition that your name or identity is not revealed. You may be assured that the confidentiality of the material will be respected and maintained at all time during the research process.

Any enquiries you may have concerning this project should be directed to me at by e-mail to: janet.mcintyre@flinders.edu.au

Thank you for your attention and assistance.

Yours sincerely

Janet McIntyre
Associate Professor
College of Business Government and Law

inspiring achievement

8.7 Appendix 3: Information Sheet

Flinders UNIVERSITY
ADELAIDE • AUSTRALIA

Mr Fajar Fadli
College of Business, Government and Law

Sturt Road
Bedford Park SA 5042

GPO Box 2100
Adelaide SA 5001

Tel: +61 8 8201 2811
Fax: +61 8 8201 3350
Email: fadl0003@flinders.edu.au

Web: flinders.edu.au

CRICOS Provider No. 00114A

INFORMATION SHEET

Title: *'A Case Study of Renewable Energy Development in Indonesia: Towards a Zero Carbon Future in line with UN Sustainable Development Goals in Yogyakarta'*

Researcher(s)
Mr Fajar Fadli
College of Business, Government and Law
Flinders University
Tel: +61 451 198420

Supervisor(s)
Associate Professor Janet McIntyre
College of Business, Government and Law
Flinders University
Tel: +61 8 82012075

Associate Professor Noore Siddiquee
College of Business, Government and Law
Flinders University
Tel: +61 8 82012302

Description of the study
This study is part of the project titled *'A Case Study of Renewable Energy Development in Indonesia: Towards a Zero Carbon Future in line with UN Sustainable Development Goals in Yogyakarta'*. This project will investigate low carbon living and sustainable energy take up in Indonesia, in terms of social, economic and environmental challenges. This project is supported by Flinders University, College of Business, Government and Law.

Purpose of the study
This project aims to find out social, economic and environmental factors that promote the development of renewable energy. Furthermore, this project try to develop a better policy and governance model for developing renewable energy in Indonesia.

8.8 Appendix 4: Consent Form

Flinders
UNIVERSITY

CONSENT FORM FOR PARTICIPATION IN RESEARCH

(by interview/focus group discussion)

A Case Study of Renewable Energy Development in Indonesia

I .....

being over the age of 18 years hereby consent to participate as requested in the Information Sheet for the research project on 'A Case Study of Renewable Energy Development in Indonesia: Towards a Zero Carbon Future in line with UN Sustainable Development Goals in Jakarta'.

1. I have read the information provided.
2. Details of procedures and any risks have been explained to my satisfaction.
3. I agree to audio recording of my information and participation.
4. I am aware that I should retain a copy of the Information Sheet and Consent Form for future reference.
5. I understand that:
   - I may not directly benefit from taking part in this research.
   - I am free to withdraw from the project at any time and am free to decline to answer particular questions.
   - While the information gained in this study will be published as explained, I will not be identified, and individual information will remain confidential.
   - I may ask that the recording/observation be stopped at any time, and that I may withdraw at any time from the session or the research without disadvantage.
6. I agree/do not agree* to the tape/transcript* being made available to other researchers who are not members of this research team, but who are judged by the research team to be doing related research, on condition that my identity is not revealed. ** delete as appropriate*
7. I have had the opportunity to discuss taking part in this research with a family member or friend.

Participant's signature.....**Date**.....

I certify that I have explained the study to the volunteer and consider that she/he understands what is involved and freely consents to participation.

Researcher's name: Fajar Fadli

Researcher's signature.....**Date**.....

NB: Two signed copies should be obtained. The copy retained by the researcher may then be used for authorisation of Items 8 and 9, as appropriate.

8. I, the participant whose signature appears below, have read a transcript of my participation and agree to its use by the researcher as explained.

Participant's signature.....**Date**.....

8.9 Appendix 5: Semi-structured Interview Questions

1. Can you please describe about energy policy in Indonesia? What are the targets want be achieved?
2. To what extent energy policy in Indonesia incorporates the concern about climate change and reducing carbon emission, and UN Sustainable Development Goals?
3. What policies or regulations has been enacted to follow up the agenda?
4. Target in renewable energy and reducing carbon emissions
   a. Would you please explain about the role of MEMR in terms of renewable energy development?
   b. I acknowledge that there is unit called DJEBTKE in MEMR. When it established and what are the purposes?
   c. What is the energy mix in the last five years? (by percentage and area), is there any improvement on renewable energy usage?
   d. Who set the RE target in national level?
   e. Is there any difference between regions/provinces?
   f. Does the central government also set targets for each region?
   g. Have you compared your target with the SDGs regarding affordable and clean energy?

   h. Can you meet the target? If not, what are the obstacles?
5. Implications
   a. Regarding the target of renewable energy, what do you think its implications would be for energy market? (social, political, economy, environmental) investment and energy price)
   b. Has it changed the way people act toward living in sustainable way? How?
      - Do you think it is a difference across people from high, mid, and low economy groups?
      - Has there any different behavior between regions in term of using energy efficiently?
6. Relationship with local government
   a. Does MEMR have established sufficient coordination with local/district unit regarding renewable energy development? (in general or to specific regions)
   b. Does central and local government have an integrated plan to develop renewable energy?
   c. Are there any sharing responsibilities between central and local governments, and between local governments?
7. Relationship with energy companies
   a. How many private energy (electricity) companies have involved in RE development in

Indonesia?

b. How does the government manage the private involvement in energy provision sector? (UU 30/2009)
c. Can private companies sell the energy directly to domestic or industrial needs?
d. Is there any incentive given to energy companies in developing renewable energy? if yes, what kind of incentives?
e. Has PLN performed optimally in providing electricity?
f. Have the energy providers ever had problems between each other and with the government regarding renewable energy development?
g. Do you think it is possible if two or more energy providers have joint operation whether in renewable and non-renewable energy provision?

Interview with Ministry of Finance

1. What sectors that become priorities for Indonesia's State Budget?
2. How did those priorities formulated? Who determines the priorities?
3. To what extent the formulation of State Budget incorporates issues such as climate change and reducing carbon emission, and UN Sustainable Development Goals?
4. How much does the government allocated for fuel subsidy? Do you think the government will continue giving the subsidy in the future?
5. Are there any incentives from the government to support the development of renewable energy? If yes, how those incentives were formulated? Who involved in the process? Were public involved?
6. Are the any special budget allocated for local government to improve renewable energy development? Please explain if any.
7. In your opinion, is the current spending policy has created supportive environment for renewable energy to develop further?
8. What are the challenges for renewable energy development?
9. What can be done to improve the situation?
10. Is there anything else you would like to tell me?

Interview with Provincial Government (Pemda)

1. Could you please describe the development policies in Yogyakarta and what has become the priorities for the provincial government?
2. To what extent does the government aware of reducing carbon emissions and UN SDGs issue? And what has been done?
3. What are the strategies in order to develop renewable energy and reducing carbon emissions?
4. Target in Renewable Energy Mix
   a. Would you please explain about the role of local government in terms of renewable energy development management?
   b. Is there any special unit to supervise renewable energy development?
   c. Where do people usually get the energy from? (percentage and area)
   d. Does the Pemda have specific target in energy service? Who set the target?
   e. Have you look up the target with the SDGs regarding affordable and clean energy and also Indonesian renewable energy target, that in 2025 renewable energy mix will be at least 23%?
   f. Can you meet the target? If not, what are the obstacles?

g. Does the local government already have strategies to address the problems?
h. Does the local government have any policies regarding renewable and clean energy?

5. Implications
   c. Regarding clean and renewable energy targets, what do you think its implications would be for energy market?
   d. Has it changed the way people act toward living in sustainable way? How?
      - Do you think it is different between people from high, mid, and low economy groups?
      - Has there any different behavior between regions in term of using energy efficiently?
6. Relationship with State Electricity Company (PLN)
   a. How significant is the PLN in providing energy to the people? How is the PLN performance?
   b. Does Pemda provide any technical and financial support to PLN?
   c. How about the tariff, is it evaluated regularly? Does it have to be endorsed by a regulation?
   d. Is there any involvement of Pemda in electing PLN Board of Directors?
   e. Is there any joint-operation with other energy companies? If yes, in what aspect?
   f. Do you think it will be easier or not to have more energy providers?
7. Relationship from central government
   a. Does the central government have any energy related program?
   b. Is there any program that related with regarding renewable or clean energy development?
   c. Is there any coordination with local government regarding renewable energy development?
8. Expectation
   a. Please give your expectation of what successful energy services should be, especially for renewable energy development?
   b. Please give your expectation of what successful sustainable development and renewable energy should be?
   c. To realize that expectation, are there any supports or preconditions needed? Please feel free to mention any necessary conditions.
   d. What steps or intervention should be taken?

I. Interview with Local Development Agency of Bantul

1. Please describe the establishment process of PLTH Pantai Baru.
2. How would you describe the role of the district government in the establishment of PLTH Pantai Baru?
3. Who responsible on PLTH Pantai Baru now and how the condition under the new management?
4. Can you please explain about the cancellation of PLTB Samas?
5. What could be the biggest obstacle for developing renewable energy?
6. How would you describe the relationships or cooperation with other institutions from provincial and central government?
7. What can be done to improve the situation to be more supportive for renewable energy development?
8. Is there anything else you would like to tell me?

II. Interview with Private Energy Industry

1. Can you please tell me the process of establishment of the project?
2. What other institutions involved and what were their roles?
3. Were there any involvement or consultation with local people before the construction began?
4. If yes, how did your organization approach the local communities?
5. What are the biggest challenge in developing renewable energy project?
6. In terms of relationships with the government, were there any involvement with the central of provincial government to discuss the formulation of energy policy?
7. What do you think about the current energy policy in Indonesia?
8. Who is the key player in formulating energy policies?
9. Do you think there has been adequate support from the government to enhance renewable energy development?
10. In your opinion, how will renewable energy develop in Indonesia?
11. Do you think business in renewable energy sector is promising?
12. What can be done to improve it?
13. Is there anything else you would like to tell me?

Interview with NGOs

1. Can you please explain about your organization? The background, purpose, and the area of concern.
2. In terms of environmental sustainability, do you think people in Yogyakarta aware with the issue?

3. What could be the factors that determine the level of awareness?
4. Has the government done something to improve people's awareness or knowledge about sustainability issues or the importance of renewable energy?
5. In terms of relationships with the government, were there any involvement with the central of provincial government to discuss the formulation of energy policy?
6. What do you think about the current energy policy in Indonesia?
7. Do you think there has been adequate support from the government to enhance renewable energy development?
8. How would you describe the relationships between your organization with government institutions. Were there any involvement with the central of provincial government to discuss the formulation of energy policy?
9. What the role has the Sultan or Keraton played in determining energy policy at provincial level?
10. In your opinion, how will renewable energy develop in Indonesia?
11. What can be done to improve it?
12. Is there anything else you would like to tell me?

Interview in Yogyakarta with Local Citizen

1. Asking about the profile of participants (age, occupation, period of living in the area).
2. How do you feel about the existence of the renewable energy power plant? Has it brought any benefits for the society?
3. Do you think renewable energy is better for the environment compare to conventional energy source?
4. Before the construction of renewable energy power plant, was there any communication between local people and the developer or the government? If yes, what kind of information were given to the local people?
5. Were there any public forum for local people to convey their opinions or concerns?
6. Who organized the public forums or meetings? How many times the forums were conducted?
7. Who were the participants and how many?
8. Do you think local people's voices were taken into account?
9. Were there any issues during the forums or meetings?
10. Do you think the forums were valuable for local communities? Please explain.
11. How do you think the forums can be improved?
12. If you have a chance to talk to the authority, what would you want to say so they can provide renewable energy service?
13. Is there anything else you would like to tell me?