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Institutional Barriers for FDI in Rwanda's Power Sector

A qualitative study examining current institutional barriers for FDI in Rwanda's power sector

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ABSTRACT

- Background** Even though only 24.5 percent of the Rwandan households have access to the national power grid, the electricity supply has difficulties to meet the peak demand. Previous research has shown that lack of electricity is a constrainer for economic development and estimations show that Rwanda between year 2013-2025 will need to invest USD 6.9 billion in its power sector. Yet, the Rwandan government will only be able to undertake 44 percent of these investments. The rest, 56 percent, needs to be financed by the private sector and a majority of these investments has to be covered by international investors. However, present institutional barriers may prevent a sufficient amount of investors to enter the Rwandan market and hence, impede further economic development.
- Purpose** This thesis intends to identify the institutional barriers present for Rwanda’s power sector’s foreign direct investors and to examine how the investors perceive these barriers.
- Literature Review** Rwanda has recently been subject to one of the world’s most atrocious genocides, a genocide which still today can explain the country’s lack of electric power. The literature review shows that a poor business environment, such as political instability, corruption, and poor government regulations are examples of institutional barriers hampering foreign investments.
- Methodology** The thesis is based on a qualitative approach where the empirical data has been gathered through semi-structured interviews. This thesis is based on seven interviews, of which five have been included in the empirical data.
- Result** The result shows that Rwanda’s power sector suffers from several institutional barriers, preventing foreign investors from entering the market. Standardized power purchase agreements and standardized concession agreements are frequently requested by the foreign investors.
- Analysis** The barriers previous research identifies as vital for foreign investments is, to a large extent, also perceived as important by the foreign power investors in Rwanda. However, the Rwandan government have managed to reduce the influence of some of the barriers previous research identified as critical.
- Conclusion** The conclusion states that Rwanda reached far in its creation of an efficient and investment friendly business environment. Yet, Rwanda still suffer from several institutional barriers. Rwanda needs to continue to reduce its institutional barriers in order to keep and attract foreign investors.

Keywords: *Rwanda, Power Sector, and Barriers for FDI*

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ABBREVIATIONS

DRC	Democratic Republic of Congo
FDI	Foreign Direct Investments
HDI	Human Development Index
IPP	Independent Power Producer
MININFRA	Ministry of Infrastructure
NCST	National Commission of Science and Technology
NGO	Non-Governmental Organizations
PPA	Power Purchase Agreements
RDB	Rwanda Development Board
REFIT	Renewable Energy Feed-in Tariff
REG	Rwanda Energy Group

1. INTRODUCTION

This introductory chapter provides the reader with a review of Rwanda's current situation and explains why the power sector is an important part of Rwanda's economy. The chapter continues to explain how an increased inflow of Foreign Direct Investments (FDI) in Rwanda can provide a solution to the country's significant shortage of electricity. Also, the chapter briefly discusses the challenges of attracting FDI and how institutional barriers may reduce the inflow of FDI. A problem discussion about these challenges will lead the reader into the purpose and research question of this study.

1.1 Background

According to Lynn (2014), the African economy is expected to be the fastest growing economy in the world and is estimated to grow from today's size of \$2 trillion to \$29 trillion by 2050. Some of the explanations to this promising outlook are expectations about an increased and young population, increased life time and a significant increase in the size of the African middle class. Eastern Africa, and especially Rwanda, has a particularly interesting role in this development. Even though Rwanda is a relatively small economy, the country has for the last decade had one of the highest GDP growth in the world (UN Statistics, 2016). However, previous research indicates that growth in developing countries has to be supported by an even faster growing power sector, i.e. growth in the power sector is one important component enabling nation-wide economic growth (Castelloano et al., 2015). Hence, a continued growth in Rwanda's power sector can be assumed to be necessary for Rwanda's possibilities to maintain their high level of economic growth. Similarly, research has also shown that the correlation between a country's Human Development Index (HDI) level and energy consumption is very strong, indicating that the power sector is not only important for a country's economic development, but also for the general prosperity in a country (Ministry of Infrastructure, 2015).

Even though only 24.5 percent of the Rwandan households have access to the national power grid, the electricity supply has difficulties to meet the peak demand (Rwanda Development Board, 2016). Occasionally this shortage of electricity forces the Rwandan government to shut down the electricity supply in certain districts (Ministry of Infrastructure, 2015). According to Castelloano et. al. (2015), instability in the electric supply and low levels of electricity access has a negative impact on economic development. Hence, increasing the power generation capacity and the connectivity rate, may provide potential for economic development in Rwanda. Furthermore, the production costs for electricity is about 50 percent higher than the average production cost in Africa. One of the explanations is that a large share of Rwanda's power generation is produced by expensive diesel generators. Therefore, there is not only need for more power, but also a need for a shift from expensive diesel generators to cheaper and more sustainable options (Ministry of Infrastructure, 2015). Considering the Rwandan governments ambitious target to increase the electricity connectivity rate to 70 percent by 2018, the African Development Bank (2013) estimates that the projected demand will require a production capacity of 563 MW by 2018 and 1120 MW by 2025. A capacity of 160 MW in February 2015 indicates there is a need for a significant amount of investments in Rwanda's power sector. Including generation, transmission and distribution, the investment requirements in the Rwandan power sector is estimated to be USD 2.5 billion between 2013 to 2017 and USD 4.4 billion between 2018 to 2025. However, the Rwandan Government is only expected to

undertake 44 percent of these investments. The rest, 56 percent needs to be covered by the private sector (African Development Bank, 2013). The African Development Bank (2013) claim that “*mobilizing such private investment of such a magnitude is totally unprecedented*”. It is clear that Rwanda’s private sector does not have these financial resources. Therefore, Rwanda is dependent on foreign direct investments in order to meet the projected demand (African Development Bank, 2013).

1.2 Problem formulation

Increased FDI in Rwanda’s power sector may have the potential to increase the economic development in Rwanda. However, statistics show that the FDI is rather limited in the country, in 2010 having a FDI/GDP ratio 80 percent lower than the average ratio in Sub-Saharan Africa (African Development Bank, 2013). FDI is often connected with high risks and institutional barriers may prevent foreign investors to enter the market (Soubbotina and Sheram, 2011). There are institutional barriers affecting foreign investors in all countries. Some of the barriers are necessary, creating a healthy industry. Nevertheless, it is important for governments to be well aware of how these barriers are perceived by the investors, ensuring that the barriers are meaningful and are not preventing “good” investors to enter the market (Blackman & Wu, 1998). In Rwanda, it is not clear which the institutional barriers are nor how the investors perceive these (Korgh, 2015). Hence, a thesis examining these barriers is important.

1.3 Research Question

Based on the problem formulation, the purpose of this thesis is to examine the institutional barriers for foreign direct investors in Rwanda’s power sector.

Hence, two sub-questions emerge:

- i) Which institutional barriers are present in Rwanda’s power sector?
- ii) How are these barriers perceived by foreign direct investors?

1.4 Limitations

A time frame of ten weeks limits the extent of this thesis. Hence, although it would be preferable to interview most of Rwanda’s power sector’s foreign direct investors, this has not been possible due to the mentioned resource restriction.

The power sector is often defined as the generation, transmission and distribution of electric power. However, since transmission and distribution on the national grid is strictly managed and controlled by the government influenced organization Rwanda Energy Group (REG) and therefore not open for foreign direct investments, this thesis will be limited to focus on electric power generation.

1.5 Disposition

Chapter 1: Introduction

This introductory chapter provides the reader with a review of Rwanda's current situation and explains why the power sector is an important part of Rwanda's economy. The chapter continues to explain how an increased inflow of Foreign Direct Investments (FDI) in Rwanda can provide a solution to the country's significant shortage of electricity. Also, the chapter briefly discusses the challenges of attracting FDI and how institutional barriers may reduce the inflow of FDI. A problem discussion about these challenges will lead the reader into the purpose and research question of this study.

Chapter 2: Theoretical framework

This literature review intends to put Rwanda into a context, describing its historical background and its current situation. Further on, the chapter narrows down to discuss Rwanda's power sector and its structure. The second part of the literature review discusses FDI and its impact on economic development.

Chapter 3: Method

The methodology chapter explains and discusses the logical base which this thesis is built on. The chapter starts with a description of the research design, followed by a description of how the data is gathered and how the respondents were selected. The chapter ends with reflections on the study's validity and reliability and what is done to mitigate the risk of biased answers.

Chapter 4: Empirics

This chapter provides the reader with the gathered empirical data. The first part of the chapter gives an overview of the interviewees and their background. The second part provides the interviewees' opinions and answers.

Chapter 5: Analysis

In this chapter, the empirical findings are analyzed and compared with previous research. Furthermore, since the purpose of this thesis is to identify how the institutional barriers the foreign investors perceive the barriers, this chapter also discuss which of the identified barriers which are perceived as most important by the investors.

Chapter 6: Conclusions

Linked to the research questions, this chapter discuss the final conclusions of this research. The chapter ends with suggestions for further research.

2. LITERATURE REVIEW

This literature review intends to put Rwanda into a context, describing its historical background and its current situation. Further on, the chapter narrows down to discuss Rwanda’s power sector and its structure. The second part of the literature review discusses FDI and its impact on economic development.

2.1 Rwanda

Rwanda is located in central Africa with the Democratic Republic of Congo (DRC) to the west, Burundi to the south, Tanzania to the east and Uganda located north of Rwanda. This means Rwanda is a landlocked country with approximately 1 000 kilometers from the closest harbor. The largest lake is *Lake Kivu* and is shared with the DRC. In terms of surface area, Rwanda is Africa’s ninth smallest country and in combination with its population of 12 428 005, Rwanda has the African mainland’s highest population density (The world factbook, 2016).

Figure 1 – Map of Rwanda



Source: Nations Online (2016)

Rwanda is a highly elevated country with green terrain and rainforests. Rwanda has several rivers and do hence have the prerequisites for hydropower. The average temperature is between 20 and 21.5 °C all year around and Rwanda has two rain seasons, one from March to May and one from September to December (The world factbook, 2016).

2.1.1 Historical Background

Due to Rwanda's inaccessible terrain, the country was one of the last countries to be colonized (History World, 2016). Despite its isolated location, Rwanda was officially given to Germany during the Berlin Conference in 1885. Yet, Rwandans did not know their land had been colonized until one decade later, when the governor Adolf Von Götzen first arrived to Rwanda (Our Africa, 2016). However, as a result of the First World War, Rwanda was in 1916 taken from Germany and in the same time put under Belgium's administration (Our Africa, 2016).

In 1935 all Rwandans were provided by identity cards, classifying the Rwandans into three ethnic groups: Tutsi (14 % of the population), Hutu (85 % of the population) or Twa (1 % of the population). This classification will later be one of the determinant factors enabling one of the world's most atrocious genocides. The minority of Tutsis were favored by the Belgians and the tension between the ethnic groups in Rwanda increased due to the inequalities between the groups (Our Africa, 2016).

During late 50's, Rwanda underwent a democratization process. However, the Tutsi establishment were reluctant to this development since it resulted in a loss of their privileges. This resulted in a further escalation of the tension between the groups and in 1959, a violent incident resulted in the death of 100s of Tutsis (UN, 2016a). The monarchy was ended in 1961 by a Hutu-led movement and the Republic of Rwanda was created. One year later, in 1962, Republic of Rwanda became independent from Belgium (Our Africa, 2016). Afraid of the new Hutu government over 100 000 Rwandans, mainly Tutsis, fled the country. As a response to the newly established Hutu government, a group of Tutsis started a guerrilla group which fought against the Hutu government and the guerrilla group conducted several attacks on the Hutu administration, each making the Hutus to kill civilian Tutsis as a response to these attacks. By the end of 1980, about 480 000 Rwandans were refugees in neighboring countries, mainly Uganda, Burundi and DRC (UN, 2016a). A group of Rwandan refugees, mainly consisting of exiled Tutsis in Uganda, created in the late 1980's the Rwandan Patriotic Front (RPF) which was a politic and military organization, which from 1988 conducted several attacks on the Hutu government (UN, 2016a). As a result, the Hutu government started in the beginning of the 1990's to broadcast aggressive propaganda, for instance claiming the Tutsis were preparing a major massacre on Hutu civilians (History World, 2016).

Due to the increased instability and tensions in Rwanda, international pressure made the Rwandan Hutu president Juvénal Habyarimana to sign a peace agreement with the RPF's leader in Arusha the 4th of August in 1993, putting an end to the civil war in Rwanda. This agreement was not appreciated by the Hutu establishment which had been in intensive fights against RPF in a civil war since 1990. Eight months later, the 6th of April in 1994, president Habyarimana were killed when his presidential plane was shot down just before landing in Rwanda. It is still today not clear whether it was the Hutus or the Tutsis that shot down the plane, however, the shoot down of Rwanda's president became to be the immediate trigger to a genocide which resulted in the death of approximately one million Rwandans. Half an hour after the plane had crashed, road blocks were set up by the Hutus in order to identify and kill the Tutsis. The day after, national radio broadcasts urged civilian people to seek up and kill Tutsis and Tutsi

sympathizers. The genocide lasted for about 100 days and estimates says that about one million Rwandans were killed during the genocide (History World, 2016). All Hutus were encouraged to join in the hunt of Tutsis and those who refused were accused to be traitors and could face an equally formidable death. No or few mass destruction weapons were used and most of the killing were conducted with every day tools such as machetes, hammers and bludgeons (History World, 2016).

As a response to the ongoing genocide, RPF resumed their military campaign against the Hutu government. The RPF was capable of putting together a well-disciplined guerilla force that made successful progress against the Rwandan army (History World, 2016). In the beginning of July, the Tutsi RPF had taken military control over entire Rwanda and the killing stopped. Hutu soldiers, governmental official and about 1 400 000 civilian Rwandans, mainly Hutus, fled the country as the Tutsi got in power. There was a fear that RPF now would go after the Hutus as a revenge of the genocide on the Tutsis. For the next couple of years, Rwanda remains unstable and in 1996, Rwanda gets involved in a military conflict with DRC.

After the genocide, the country was totally ripped out and Rwanda was only a shell of a country. Its institutions and governmental system was destroyed and the trust between the people was damaged. Courts, official buildings and homes had been burned down and most government officials had either been killed or fled the country.

In year 2000, Rwanda presented Vision 2020, which objective was, and stills is, to make Rwanda a middle income economy by 2020. Considering the poverty and terrible state Rwanda was in by year 2000, this strategic document was considered very ambitious. The following quote of only eight sentences represents the entire conclusion in Vision 2020, yet it gives an insight of how the situation looked like in Rwanda by year 2000 (Kaberuka, 2000, page 28).

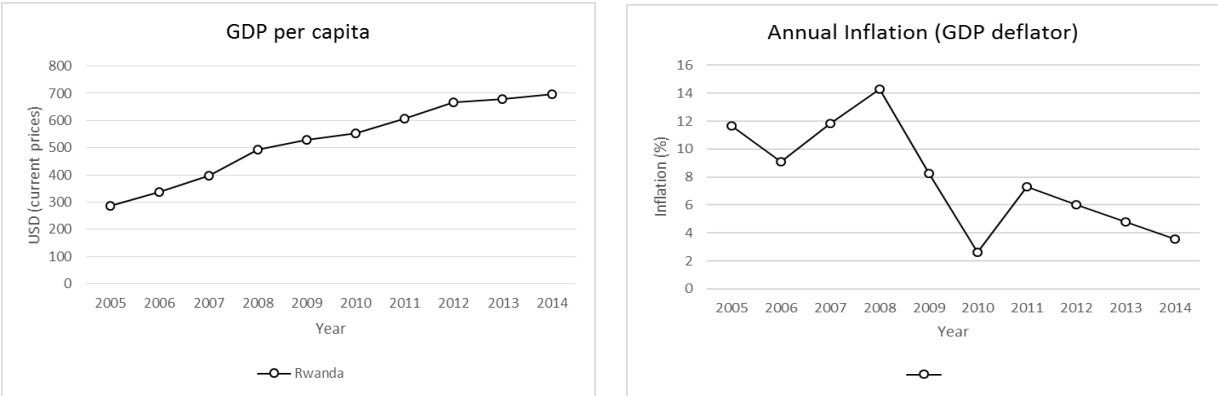
“Conclusion

VISION 2020 represents an ambitious plan to raise the people of Rwanda out of poverty and transform the country into a middle-income economy. Some will say that this is too ambitious and that we are not being realistic when we set this goal. Others say that it is a dream. But, what choice does Rwanda have? To remain in the current situation is simply unacceptable for the Rwandan people. Therefore, there is a need to devise and implement policies as well as mobilize resources to bring about the necessary transformation to achieve the Vision. This is realistic based on the fact that countries with similar unfavorable initial conditions have succeeded. The development experience of the East Asian ‘Tigers’ proves that this dream could be a reality.”

2.1.2 Current Economic Situation

It has now been more than 20 years since the genocide and the development has been incredible. The last decade (2005-2014), Rwanda has had an average annual growth rate, in fixed prices, of remarkable 7.9 percent, making Rwanda one of the fastest growing economies in the world (UN Statistics, 2016). From having the tenth lowest GDP per capita in the world by 2005, Rwanda has since then more than doubled their GDP per capita and is slowly catching up with the rest of the world, in 2014 having the 15th lowest GDP per capita in the world (UN Statistics, 2016). Rwanda has suffered from high inflation. However, since 2010, Rwanda has been able to keep the inflation rate below eight percent and the inflation rate seems to go in the right direction (World Bank, 2016).

Figure 2 – GDP per capita & Inflation



Source: Data collected from www.worldbank.org (2016)

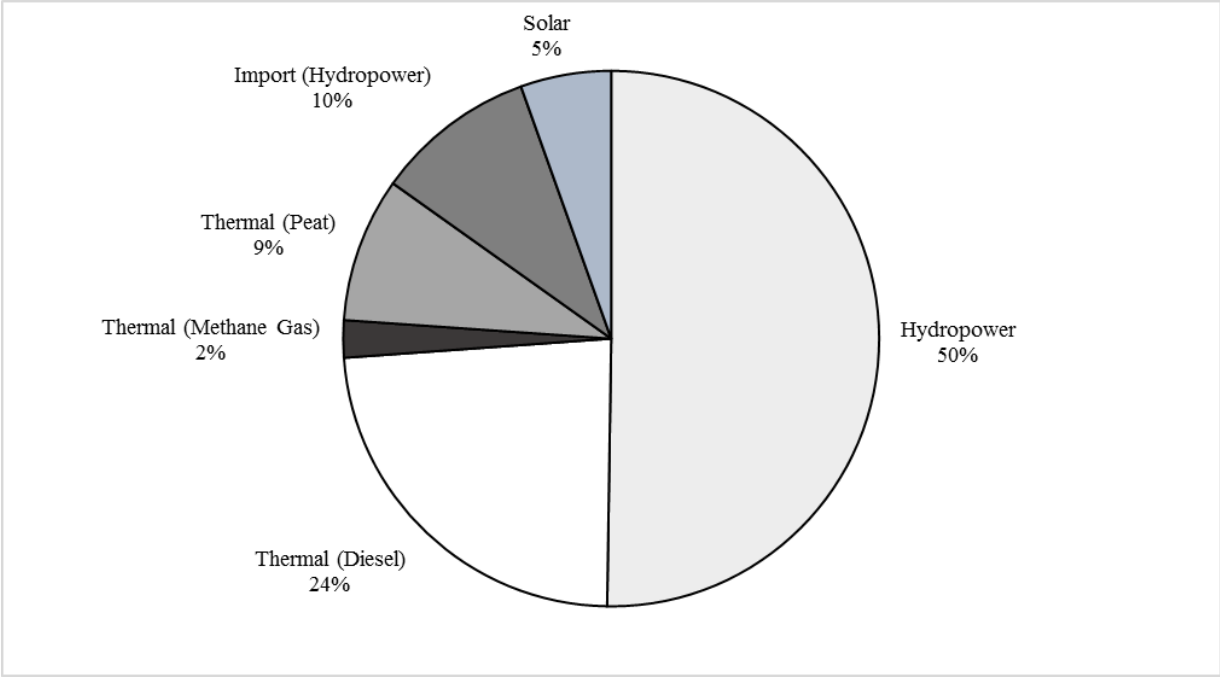
One of the reasons for the rapid economic development in Rwanda may be the country’s success in fighting corruption. In 2015, Rwanda was ranked as the African mainland’s second least corrupt country and scores rather well on a global basis as well, being ranked as the 44th least corrupt country in the world (Transparency International, 2016). Furthermore, the Rwandan government has acknowledged that the private sector investments will be an essential pillar for the country’s continued economic development and have therefore implemented several reforms intended to facilitate investments, for instance through establishing Special Economic Zones (SEZ) – a framework intended to promote increased private sector investments (Ministry of Trade and Industry, 2010). As a matter of fact, according to the World Bank’s data (2016), Rwanda is ranked as that African mainland country where it is easiest to conduct business.

Even though Rwanda made great progress, Rwanda faces several challenges and is still heavily dependent on international aid. For the financial year 2015/2016, Rwandan government is estimated to be able to finance 66 percent of its own budget. Considering that Rwanda only financed 54 percent of its budget three years earlier, this number is still an improvement (Government of Rwanda, 2016).

2.1.3 Rwanda’s Power Sector

Rwanda has one of the lowest electricity consumption per capita in the world. In the developing countries, the average yearly per capita electricity consumption in 2013 amounted 1200 kWh. In the same year, the average per capita electricity consumption in Rwanda amounted 42 kWh, clearly far behind other developing countries (Ministry of Infrastructure, 2015). One explanation to the low electricity consumption is the low connectivity rate. In Rwanda, only 24.5 percent of the population connected to a grid or off-grid connection. A second explanation to Rwanda’s low electricity consumption is the low amount of available electricity. In 2015, Rwanda had, including the imported electricity, a power supply capacity of 160 MW (REG, 2016). Occasionally, the supply is unable to meet the demand during peak hours (Ministry of Infrastructure, 2015). As shown in figure 3, the majority of the electricity is produced from hydropower. The second largest electricity source is diesel-powered generators (REG, 2016). During the last decade, Rwanda has begun to generate power from other types of sources, namely solar, peat and methane gas. The Energy Sector Strategic Plan (Ministry of Infrastructure, 2015) describes that these sources will play a significant role in the continued development of Rwanda’s power sector.

Figure 3 – Power Generation Capacity per February 2015 (% of total capacity)



Source: REG (2016)

The large share of diesel-powered generators causes several challenges for the Rwandan economy. Rwanda is often ranked rather high in international comparisons of investment friendliness (World Bank’s data, 2016). However, due to the large share of expensive diesel-powered generators, Rwanda has one of the highest electricity tariffs in the world (Ministry of Infrastructure, 2015). According to Twagirashema and Lode (2013), today’s cost of electricity is one of the most important factors to Rwanda’s high cost of doing business and is a significant disadvantage for Rwanda compared to neighboring countries. Furthermore, Twagirashema and

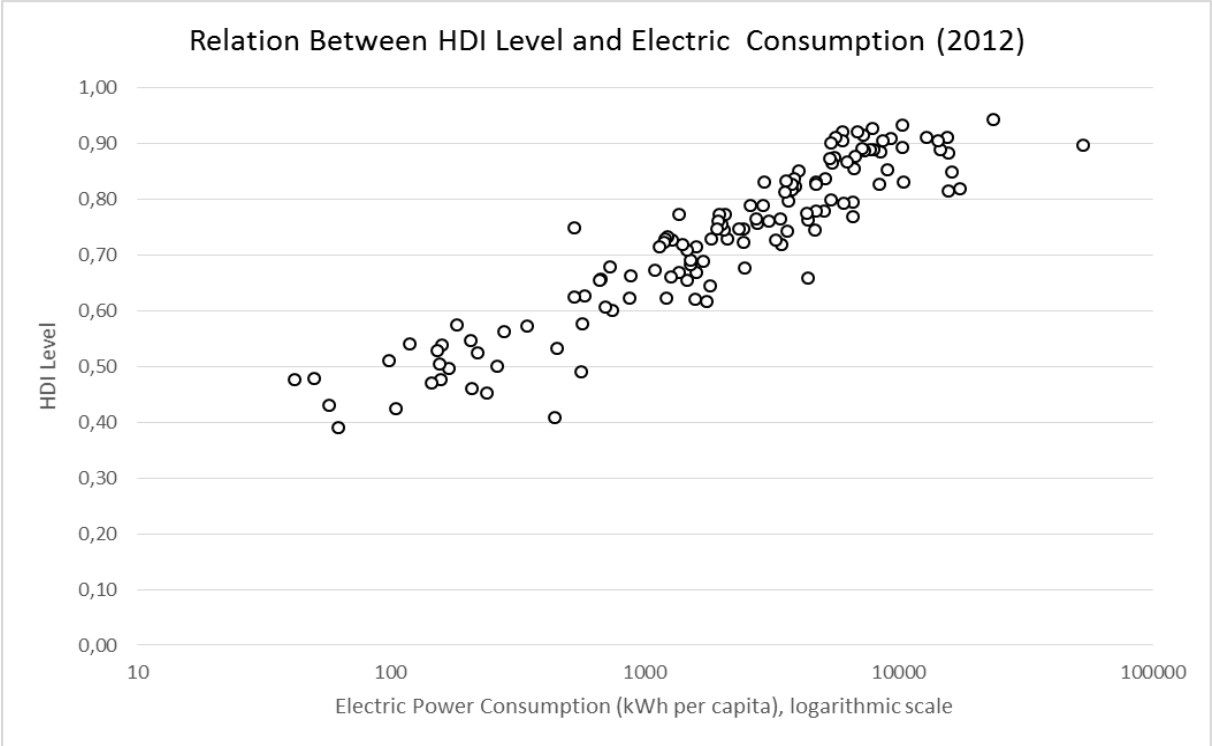
Lode (2013) argue that improving the competitiveness of Rwanda will therefore not only require more electricity but also much cheaper energy (Twagirashema & Lode, 2013).

Secondly, the consumption of fossil fuels results in massive emissions of dangerous substances into the atmosphere. Twagirashema and Lode (2013) continues to argue that the use of it has been important and have supported the development of the world’s economies. However, the problems of the CO2 emissions are getting worse and worse. To continue in this direction would be irresponsible. However, it would not be possible for Rwanda to stop using the diesel generators immediately, it would not create a sustainable development for Rwanda (Twagirashema & Lode, 2013).

As previously discussed, the power sector is crucial for the development of the Rwandan economy and for the country’s future prosperity. The power sector is linked to almost all other sectors in an economy and a well working power infrastructure is important for the development of industries and businesses, social institutions, administrative offices and for the general living condition for Rwandan households (Ministry of Infrastructure, 2015). If the Rwandan economy is going to achieve reasonable level of growth, it is clear that the power supply in Rwanda has to increase, and that is rapidly (Twagirashema & Lode, 2013).

As shown in Figure 4, there is a strong correlation between a country’s HDI level and electric consumption, indicating that an increase the power supply in Rwanda is not only necessary for the economic development in the country but also for the general prosperity in the country (Twagirashema & Lode, 2013).

Figure 4 – Relation between Countries’ HDI Level and Electric Consumption (2012)



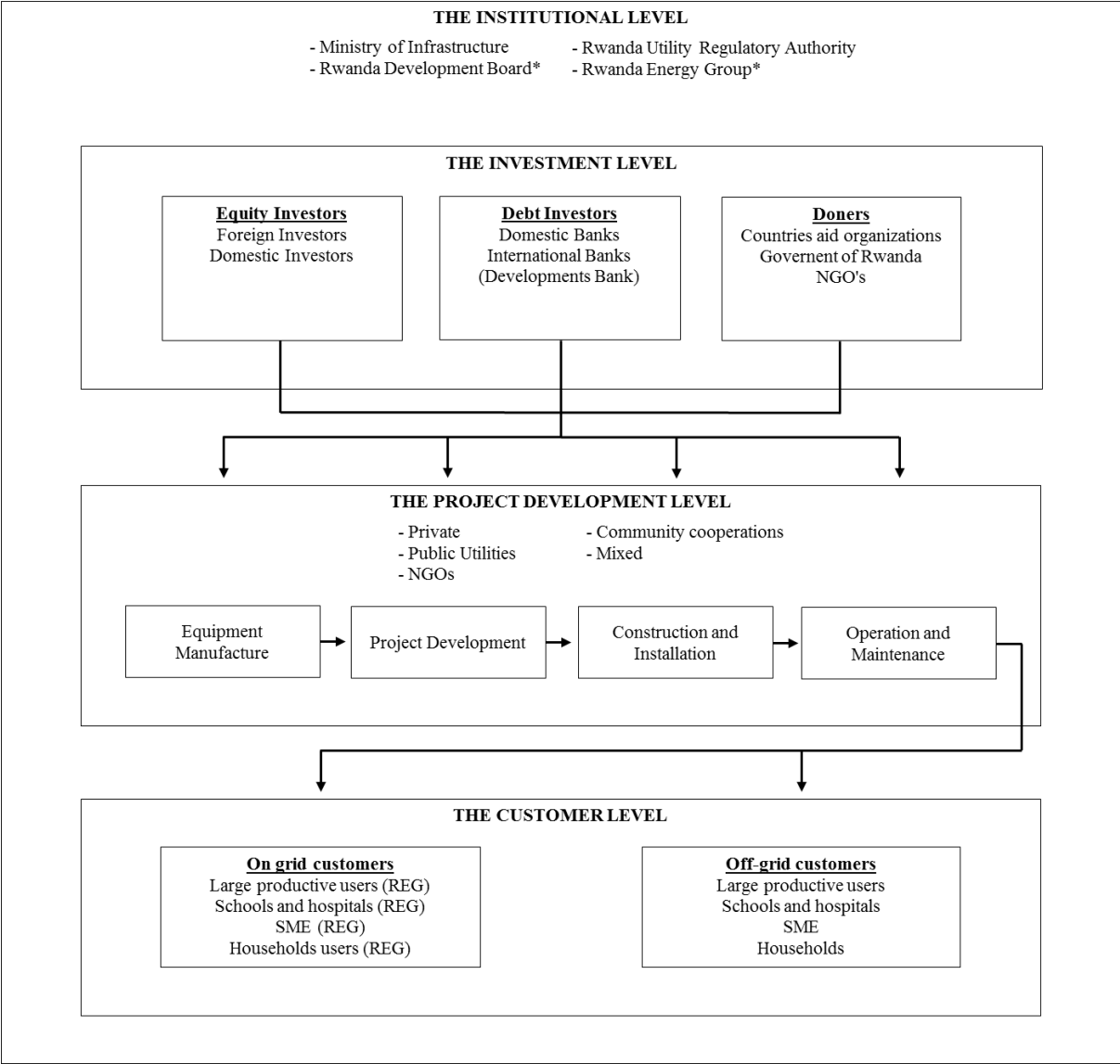
Source: *Data collected from World Bank (2016) and UNDP (2016).*

The Rwandan government is well-aware of the power sector's importance for the country's continued development and have therefore formulized an ambitious strategy. The defined target shows that Rwanda aims to achieve a 70 percent connectivity rate by 2018 and a power capacity of 563 MW by the end of 2018 (Ministry of infrastructure, 2015). Expanding the power sector to that extent will require significant investments. The African Development Bank (2013) estimates that the power sector has to invest USD 6.9 billion between 2013 to 2025 in order to be able to meet the projected demand. Mobilizing this magnitude of capital will require an efficient market and a substantial collaboration between the power sector's players (African Development Bank, 2013)

2.1.4 The Four Levels in Rwanda's Power Sector

There are many stakeholders participating and influencing the Rwandan power sector. According to Korgh (2015), it is possible to divide the power sector into four essential blocks creating the back bone of the sector: *i)* the institutional level, *ii)* the investment level *iii)* the project development level, and *iv)* the customer level. Figure 5 illustrates how these blocks are linked to each other.

Figure 5 – The players within Rwandan power generation



* Rwanda Development Board (RDB) and Rwanda Energy Group (REG) are non-governmental organizations, yet under the government's influence.

Source: Author (based on the literature review and an interview with Korgh (2015)).

Figure 5 is only intended to visualize the broad outline of the power sector. The industry is far more complex and it is not uncommon that an actor is participating in several of the power sector’s activities. As an example, the Rwandan government is the main actor within the institutional level, but can also participate in the investment level, the project development as well as in the customer level.

1. The Institutional Level

There are several organizations regulating, or in other ways influencing, the framework in which the players in the power sector have to adapt to. It is the institutional level which creates the “game board” in the sector. According to Rwanda Development Board (RDB, 2016), the four most dominant governmental-linked organizations accountable for regulating the Rwandan power sector are; the Ministry of Infrastructure (MININFRA), Rwanda Utilities Regulatory

Authority (RURA), Rwanda Energy Group (REG) and Rwanda Development Board (RDB). These organizations do for instance influence the market through providing *i*) strategic targets and plans, *ii*) providing the framework of law, policies and regulations making these targets realistic, *iii*) approving the power projects, *iv*) negotiating the condition with the power producers, and *v*) handling transmission and distribution of electricity. It is the institutional level which is responsible for the institutional barriers foreign direct investors perceive as severe for the investment climate in Rwanda. According to Blackman and Wu (1998), some barriers may be necessary, creating a healthy industry. Nevertheless, some of the barriers may do more harm than good, making it reasonable to ease these barriers. It is also the institutional level which is responsible for attracting investors into the market.

2. The Investment Level

It is the investment level which owns and fund the power sector. The investors can invest in power projects, either through equity or debt investments. A debt investor can for instance be domestic or international banks. According to the African Development Bank (2013), some of the international debt investors in Rwanda's power sector are the African Development Bank, Emerging Africa Infrastructure Fund and European Financing Partners. These types of international debt investors create an complement to the domestic debt investors. The access to domestic funds is limited in Rwanda and the interest rate is high, in 2010 averaging at 16.67 percent (Trading Economies, 2016).

The equity investors are not only one of the funders of power plants, but is also the ones that control and own the power projects. According to Korgh (2015), it is not unusual that the owners of a power projects change during the development of a power plant. For instance, there are examples where foreign investors construct and develop a power plant, but sell it when the power plant is fully functional. The power generation sector was up to 2000 closed for private investors but since then, private investors have been allowed into the market. However, Government of Rwanda is still the single largest equity investor.

In addition to debt and equity investors, various aid organizations invest in the Rwandan power sector. These organisations do not only provide funds in form of cash, but do usually have a large portfolio of various ways to support power project. Sharing some of the debt investors risks, hence making it cheaper for the project developer to get access to money is one example how donors may intervene in the power market. In Rwanda, donor organizations play a significant role and it is clear that Rwanda won't be able to achieve their ambitious targets without the aid organizations.

3. The Project Development Level

It is the project developer who are develop the power technology, manage the development of the project, construct and install the power plan and who are managing the operation and maintenance (NCST, 2015). It is not always the same firm that are responsible for all these processes and many of the activities can be outsourced to contractors. It is also not uncommon that the some of the equity investors also is managing some of the activities within the project development level. Government of Rwanda is still the single largest project developer.

However, according to their strategic document *the power sector* (2013), the government of Rwanda intend to reduce their participation in construction the power sector, letting private project developer manage the operation and maintenance. It is the project developer who represent the supply of electric power

4. The Customer Level

It is the customer which form the demand in the power sector. Approximately 24.5 percent of the Rwandan households have access to electricity – 23 percent with an on-grid connection and 1.5 percent connected via an off-grid connection (RDB, 2016). It is REG which is responsible for transmission and distribution of electric power on the national grid. Hence, it is REG which purchase the power from all independent power producers (IPP) which are providing electricity to the national grid. Hence, it is REG and IPP who negotiate the price via a power purchase agreement (PPA). If an IPP provide electricity through an off-grid solution, the IPP will sell the electricity to the end user. The ministry of infrastructure divides the power sector's customers into four groups, which is shown in Figure 5.

Providing electricity through off-grid connection is an interesting topic in Rwanda. Rwanda's target is to increase the access to electricity to 70 percent by 2018 (48 percent via the national grid and another 22 percent via off-grid solutions) (Ministry of Infrastructure, 2015). Increasing the off-grid connection from 1.5 percent to 22 percent in a few year is a very high target. Providing off-grid solution to households which is not used to electricity and in addition have a rather limited purchase power has been proven to be challenging and is often not economically viable without donors. Yet, in Rwanda there are examples of off-grid solution. However, these are connected to companies consuming a significant amount of electricity and with a sufficient purchase power.

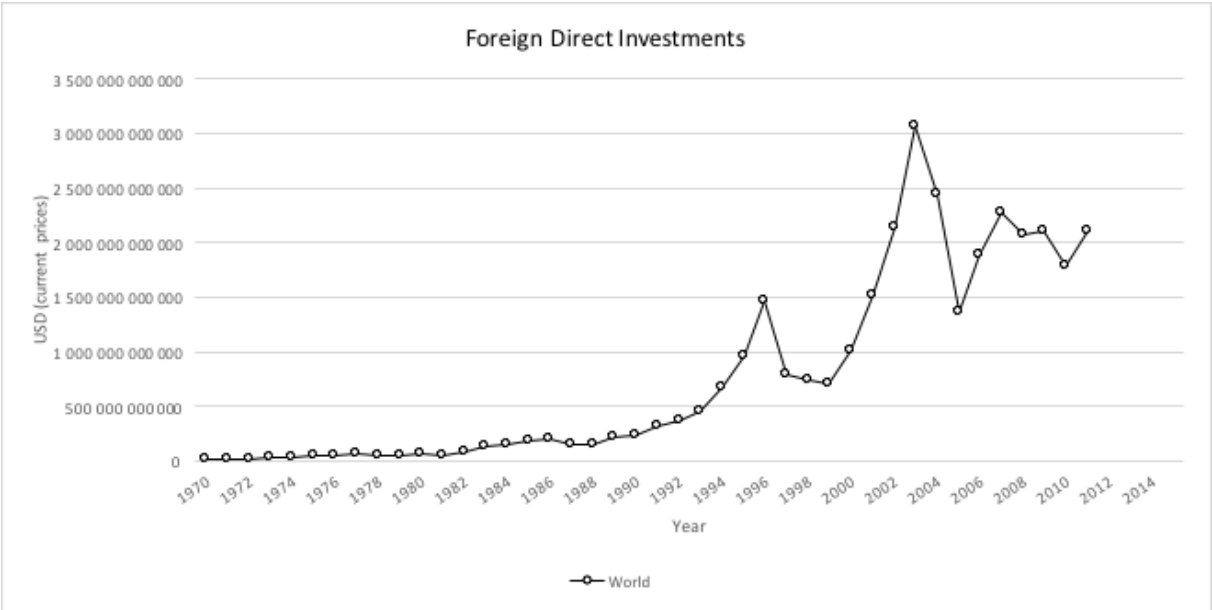
2.2 Foreign Direct Investments

There are many definitions of Foreign Direct Investments (FDI), and is often described in a similar way as Adeleke, Olowe and Fasesin (2014, page 234) describes it:

“Foreign Direct Investment (FDI) is a direct investment into production or business in a country by an individual or company of another country, either by buying a company in the target country or by expanding operations of an existing business in that country. Foreign direct in investments is in contrast to portfolio investment which is a passive investment in the securities of another country such as stocks and bonds. World Bank (1996) conceptualized Foreign Direct Investments (FDI) as investments that is made to acquire a lasting management interest (usually 10% of voting stocks) in an enterprise and operating in a country other than of the investors (define according to residency). The investors purpose being an effective voice in the management of earning either long term capital or short term capital as in the nations balance of payments account statement (Macaulay, 2012).”

Foreign Direct Investments can be divided into two group – outward and inward investments. Outward investments refer to the investment going out from a country, while inward investments refer to investments that are coming in to the country. As shown in Figure 6, the world’s amount of foreign direct investments has increased significantly during the last 40 years (World Bank, 2016). Soubotina and Sheram (2004) explain that the share of the outwards investments going to developing countries has risen to more than one-third of global FDI and mention liberalizations of the developing countries markets as one important explanation. Moreover, the authors explain that globalization has made this increase possible and that globalization has led to the disappearance of many of the investment barriers. Hence, globalization is one of the most important reason to this remarkable increase.

Figure 6 – Foreign direct investments in the world (inwards investments)



Source: Data collected from World Bank (2016)

2.2.1 Foreign Direct Investments and its impact on growth

Foreign direct investment's impact on the economic growth has been under a thorough academic review during the last decades. The effects are not always obvious and academia has been split into two camps – those who have identified positive effects on economic growth and those who have identified none or even negative effect on economic growth. Nevertheless, it is possible to divide the outcomes of FDI into direct and indirect effects.

According to Kastrati (2013), the direct effects of FDI on a country's balance of payments account are the following:

1. The initial investment is accounted as inflow/outflow on the capital account.
2. If the FDI is a substitute for import of goods or services, it will improve the current account for the host country.
3. If the FDI is used to export goods or services, the investment will result in an increase in the current account.
4. The investment income appears as an inflow/outflow on the current account. The investment income constitutes of *i*) profit from overseas subsidiaries, *ii*) dividend from owning shares in overseas firms, and *iii*) interest payments from lending abroad.

In addition to these direct effects on the balance of payments, there are several indirect effects that may have a significant impact on the national account and which may affect the growth in the recipient country.

On one hand, research has shown that inward foreign direct investment causes a significant economic growth. Kastrati (2013) explains why the indirect effects may be significant, and gives examples of how the indirect effects can support economic growth:

- 1) Technology spillovers
- 2) Creation of domestic jobs
- 3) Enhancement of competitive business environment
- 4) Contribution to international trade integration
- 5) Improving the social condition through bringing international technologies and standards

Soubbotina and Sheram (2004) has in their book *Beyond Economic Growth: An introduction to sustainable growth* also a rather positive view on FDI. The authors explain that FDI can support economic growth, and can do so without adding foreign debt. Furthermore, the authors state that FDI usually brings advanced technologies, managerial and marketing skills and easier access to export markets – all factors which indirectly support the economic growth. Another spillover effect is the added competition between foreign and domestic companies. The increased competition makes the national markets more competitive and hence the national economy more efficient. The authors also emphasize that FDI, from an economic growth

perspective, is more favorable than portfolio investment. This because foreign direct investors tend to have a longer investment horizon and tend to be less sensitive to economic fluctuations.

Adeleke, Olowe and Fasesin (2014) examined the impact of foreign direct investment on the economic growth in Nigeria between 1999 and 2013. Their findings show that the economic development is directly related to the inflow of foreign direct investments. The authors conclude that it is likely that foreign direct investments are a driver for economic development. Based on these findings, the authors argue that it would be beneficial for the Nigerian government reduce its investment barrier. A similar research (Onu, 2012), describes that the fast growing economies in Asia, also known as the Asian Tigers, owe their success to the significant inflow of foreign direct investment. The author continues to describe how foreign direct investments has increased the human capital and the technology level in the host countries. Todaro (1994) support this view in his book *Economic Development*. He claims that foreign direct investments stimulate economic development and points out increase in domestic technology level and human capital as two important explanations. Furthermore, Todaro (1994) argues that an inflow of foreign direct investments can fill the gap between domestic and foreign savings, hence foster economic development.

On the other hand, a large amount of academic research shows on the opposite relationship of economic development and inflow of foreign direct investment. Mencinger (2003) argues that policy makers often exaggerate the benefits of foreign direct investment and overlook many of the issues. Mencinger (2003) continue to argue that foreign direct investment makes the host country vulnerable to financial shocks and that the fact that foreign direct investment will result in future outflow of GDP will create a structural deficit on the current account. Similarly, Kastrati (2013) discuss in her article *The Effects of Foreign Direct Invesments for Host Country's Economy* the negative aspects of FDI. The author explains that large foreign companies in small economies can, and often do, abuse their dominant market position. Furthermore, Kastrati (2013) explain that some of the developing countries have overestimated the benefits of FDI since the countries' current economic situation are not in a state where they are able to take advantage of the technologies or know-how. Kastrati (2013) also reflects about the increased competitions. In small economies, large foreign companies may outcompete the smaller domestic firms, resulting in a monopolized market and hence, a less efficient market. To conclude, Adeleke, Olowe and Fasesin (2014) explain that the impact of FDI on growth is not is not always clear. Previous research is a bit ambiguous in this matter, indicating that FDI's impact of the national growth depends on country-specific conditions.

As shown by previous research, foreign direct investments may affect the economic development in many ways and the effects are not conclusively positive. However, as described in chapter 2.1, foreign direct investments is a requirement in order for Rwanda to achieve their ambitious targets for their power sector. Furthermore, developing the power sector will be one of the pillar for the country's continued development. Hence, attracting foreign direct investments is necessary for the government of Rwanda.

2.2.2 Institutional Barriers for Foreign Direct Investments

In 1998, Blackman and Wu, examined in their article *Foreign Direct Investments in China's Power Sector: Trends, Benefits and Barriers* the institutional barriers for FDI in China's power sector. The authors identified eight barriers, most of them connected to poor governmental regulations.

1. Ownership restrictions
2. Rate of return restrictions
3. Risks associated with project approval process (delays etc.)
4. Ambiguity of relevant laws and regulations
5. Risk connected to the foreign exchange rates
6. Poor electricity pricing methods that not represent changes in costs
7. Risk related to weak contract enforcement
8. Credit risks of power purchaser

Based on these barriers, Blackman and Wu (1998) examined how these barriers were perceived by the foreign investors. Their result shows that *Ambiguity of relevant laws and regulations*, *Risks associated with project approval process (delays etc.)* and *Rate of return restrictions* were perceived as most severe by the foreign investors. *Ownership restrictions* and *Risk connected to the foreign exchange rates* were ranked lowest. The authors conclude that some of the barriers may not be meaningful and the government should hence try reduce their importance.

Blomström and Kokko (2003) describes in their article *The economics of foreign direct investments: Investment incentives* that the academic literature about why large foreign companies choose to investment in specific location often highlights the importance of market size and the level of real income, skill levels and know-how in the host economy, availability of infrastructure, trade policies, and political and macroeconomic stability. Furthermore, the authors explain that the academic literature haven't had enough focus on investment incentives, which according to the authors are playing an increasing role in companies FDI decisions.

Adeleke, Olowe and Fasesin's (2014) discuss in their article about FDI in Nigeria how the Nigerian government could attract more FDI through reducing its institutional barriers. Firstly, the authors argue that it is of great importance that the Nigerian government strive for a stable political and economic environment, improvements of infrastructure, and increased security at all levels in the country. Secondly, the Nigerian government should focus on increasing the governments accountability and transparency, since these are barriers may prevent foreign investors to enter the Nigerian market. Lastly, by liberating the foreign sector through reducing other trade barriers such as arbitrary tariffs and expensive import and export duties, the Nigerian economy could reduce even more investment barriers.

Soubbotina and Sheram (2004) discuss in their book *Beyond Economic Growth: An introduction to sustainable growth* the importance of institutional barriers when attracting FDI. The authors argue that FDI is allocated to those developing countries that offers the best

investment climate. Furthermore, the authors mention political stability, good prospects for economic growth, easy convertibility of the national currency and liberal government regulations as substantial factors creating a healthy investment climate.

Based on data from 83 developing countries, Busse and Hefeker (2007) examined the linkage among political risk, institutions and foreign direct investments. Their result shows that government stability, internal and external conflict, corruption and ethnic tensions, law and order, democratic accountability of government, and qualitative of bureaucracy are highly significant determinants of foreign investment inflows. Furthermore, the authors conclude that these political risks and institutional barriers matter the most when multinational corporations decides which developing country to invest in.

In 2002, Asiedu (2002) examined whether the elements that affect foreign direct investments in developing countries affect Sub-Saharan Africa differently. The author's result indicates that institutional barriers such as openness to trade do affect developing countries and Sub-Saharan countries differently. Due to this fact, the author concludes that suggesting policies that have been successful in developing countries may not be proportionately successful in Africa. Hence, it is of importance to identify the barriers present in various location.

3. METHODOLOGY

The methodology chapter explains and discusses the logical base which this thesis is built on. The chapter starts with a description of the research design, followed by a description of how the data is gathered and how the respondents were selected. The chapter ends with reflections on the study's validity and reliability and what is done to mitigate the risk of biased answers.

3.1 Research design and strategy

This thesis intends to examine current institutional barriers for foreign direct investors in Rwanda's power sector and to scrutinize how these barriers are perceived by the foreign investors. A qualitative approach based on semi-structured interviews forms the base of how the data is gathered and analyzed.

A qualitative study was elected due to several reasons. Firstly, a qualitative approach is more suitable than the quantitative approach when a researcher wants to explore and understand opinions and perceptions within the research topic (Bryman & Bell, 2011). Indeed, the investors' opinions and perceptions is one of the main focuses of this thesis. Secondly, the qualitative approach offers more flexibility than the quantitative approach, enabling the study to cover new areas which hasn't been explored by previous research (Bryman & Bell, 2011). Considering that the institutional barriers for foreign direct investors in Rwanda's power sector may differ from those barriers identified by previous research, the qualitative approach appears to be suitable for this research purpose. Third, a qualitative approach may be preferable when the researcher aims to examine areas which are difficult to quantify (Bryman & Bell, 2011). Even though some of the potential barriers is possible to quantify (for instance: corruption, transparency and domestic security level), some barriers may be difficult to quantify (for instance: investment incentives, risks associated with project approval process, and risk related to weak contract enforcement). Lastly, the qualitative approach enables the researcher to get a deeper and a more explanatory understanding of the research topic (Bryman & Bell, 2011). To understand why and how the institutional barriers effect the foreign investors lies within this thesis interest.

3.2 Semi-structured Interviews

The empirical findings consist of semi-structured interviews with stakeholders in Rwanda's power sector. The benefits of this approach is that semi-structured interviews enables the interviewees to elaborate with their answers, providing more freedom to explore the interviewees' opinions and perceptions. Hence, semi-structured interviews, compared to structured interviews, makes it easier to get the most out of each interview, considering the possibility to focus and narrow down on the questions suitable given the certain situation and circumstances (Bryman & Bell, 2011).

The interview protocol is presented in the appendix and consists of five questions. Due to two of the interviewees' request, the interview protocol was in two cases sent to the interviewees in advance. The empirical data is based on five interviews and all of the interviewees have extensive knowledge about Rwanda and its power sector. Four, out of the five interviews, were based on the previously mention interview protocol. The reason to why the fifth interview

wasn't based on the same interview questions is further described in the description of the *selection of respondents (chapter 3.5)*. Accordingly to the previously described semi-structured interview technique, all respondents were allowed to elaborate with their answers and follow-up questions were asked. All interviews were recorded and transcribed.

3.3 Interview guidelines

The full interview protocol is presented in appendix. However, this section describes the purpose behind each question:

- i) **Could you briefly describe your company and your project in Rwanda?**
Purpose: To confirm I understood the project properly and to get an update about the project's current situation.
- ii) **Which are the reasons why you invested in Rwanda and not in other countries?**
Purpose: This question is intended to opening up the discussion. Furthermore, it gives an indication of which barriers which may not be present in Rwanda and which the incentives are for investing in the country.
- iii) **Which institutional investment barriers have you experienced in Rwanda?**
Purpose: This is the main question and is intended to give a good understanding of the investments barriers for foreign investors.

Follow-up questions:

- 1) Are these barriers also available in other countries (Sub-African or the country of your origin)?
 - 2) Considering your firm-specific conditions, do you think you experience (or do not experience) barriers which other firms may experience? (Domestic vs. Foreign, Type of energy source, Large vs. Small, etc.)
- iv) **What could the Rwandan government do in order to reduce these barriers and improve the business climate?**
Purpose: To get an understanding of which barriers that could be reduced and to get an indication of which of the barriers the investors perceive most limiting.
 - v) **Would these measures (implementing the actions mentioned in question v) result in more/earlier investments from your side?**
Some barriers may be seen as inconvenient or as "profit-limiting" for the investors, but may not change their investment behaviour. This question is intended to give an understanding of the sensitivity among the investors.

3.4 Selection of respondents

The respondents have been selected through a method, which by Bryman and Bell (2011) is explained as purposive sampling. This means that the respondents haven't been selected on a random basis, but been found through identifying key players in Rwanda's power sector. The key players in the Rwandan power sector were identified together with First to Know, the

National Commission of Science and Technology (NCST) and Carnegie Mellon University. These organizations also supported the author by establishing the initial contact with the key players. In order to get a holistic understanding of the barriers influencing the foreign investors, the author have tried to include respondents with different backgrounds. Hence, respondent with experience from both the institutional level and investment level have been selected. Ten organizations were asked to participate in this research. However, three organizations declined the invitation (Rwanda Energy Group (REG), KivuWatt and Gigawatt Global).

As shown in Table 1, this thesis is based on seven interviews. However, three of these interviews has been focused on understanding the general conditions in Rwanda and have hence not been following the interview protocol presented in Appendix 1. Interview 1 to 3 have provided a basic understanding of Rwanda, its power sector, its challenges and how it is to conduct research in Rwanda. This has been essential in order to be able to formulate the research question and the research methodology. Furthermore, interview 1 to 3 have also provided an understanding of who the key players in Rwanda's power sector is. Furthermore, interview number 2 provided a good insight in the institutional barriers for foreign investors in Rwanda, and therefore, the answers given during this interview is included in the empirical data.

Interview 4 to 7 have been following the interview protocol presented in Appendix 1. One of the interviews represents the institutional level. The rest (four interviews) of the interviewees have experience of foreign investments in Rwanda's power sector.

Table 1 – Interview Overview

No	Name	Position	Organization	Date	Duration	Location for Interview	Purpose
1	<i>Interviewee 1</i>	<i>Analyst</i>	<i>Government of Rwanda</i>	<i>2015-11-24</i>	<i>30 min</i>	Kigali, Rwanda	<i>Get a basic understanding of Rwanda and its power sector</i>
2 (a)	<i>I. Twagirashema</i>	<i>Executive Director at Rwanda Investment Group, Chairman at Energy Private Developers and one of the two authors to Energy Rwanda (2013)</i>		<i>2015-11-30</i>	<i>60 min</i>	Kigali, Rwanda	<i>Get a basic understanding of the Rwandan power sector and the investment climate in Rwanda</i>
3	<i>B. Korgh</i>	<i>Director</i>	<i>Carnegie Mellon University in Rwanda</i>	<i>2015-12-03</i>	<i>60 min</i>	Kigali, Rwanda	<i>Get a basic understanding of the Rwandan power sector and to understand the research conditions in Rwanda.</i>
4 (b)	Interviewee 4	Analyst	Government of Rwanda	2016-05-09	60 min	Kigali, Rwanda	Get an understanding of current investment barriers and how they are perceived by the foreign investors.
5 (c)	O. Ekman	CEO	First To Know Scandinavia AB	2016-05-11	60 min	Skype	Get an understanding of current investment barriers and how they are perceived by the foreign investors.
6 (d)	D. Klinck	CEO	East African Power Ltd	2016-05-13	45 min	Kigali, Rwanda	Get an understanding of current investment barriers and how they are perceived by the foreign investors.
7 (e)	H. Karasoy	Director	Hakan AS	2016-06-24	45 min	Skype	Get an understanding of current investment barriers and how they are perceived by the foreign investors.

The letters in the bracket in the “No” column is the interviewees identification letter which is used in the empirical chapter.

3.5 Validity & Reliability

This thesis intends to shed a light upon barriers for foreign direct investment in Rwanda. As described by Bryman and Bell (2011), interviews about flaws within your own system may be sensitive to some interviewees and may hence bias the answers. This may cause some issues with the validity of this study, and Bamberger (2009) describes that hypothetical bias may occur when the respondent systematically gives biased answers. For this reason, two things related to the validity has to be considered. Firstly, since investment barriers often are country-specific and is often viewed as flaws in the national system, it is not unlikely that the government representatives are not proud over all barriers that exist in Rwanda. This may result in biased answers. Secondly, since foreign investors in the Rwanda power sector need to have close collaboration with the government, it is not unreasonable to believe that these investors want to keep a good relationship with the government of Rwanda. Since expressing country-specific issues and flaws could be seen as something that would impair the relation, there is a risk that the foreign investors will provide biased answers.

In order to mitigate these potential validity issues, two measures have been taken. Firstly, the purpose of the thesis has been thoroughly explained. By describing that it is essential for the Rwandan government to know how the investment barriers are perceived by the investors in order for them know how they can improve the business climate, the interview may appear to be more constructive and not something that is going to accuse the government for some current issues. Secondly, even though not requested by the interviewees, interviews with government officials have been kept anonymous in order to allow them to elaborate on their own thoughts and concerns.

Moreover, validity issues can also occur when the sample do not represent the population (Bryman & Bell, 2011). By including interviewees with different backgrounds, this validity issue can be decreased. However, it is possible that some of these validity issues still remain problematic.

According to Bryman and Bell (2011), reliability issues can occur when the research is based on a small sample size (Bryman & Bell, 2011). Since only five interviews are included in the empirical findings, it is likely that this thesis won't be able to provide a holistic and complete overview of all the institutional barriers present in Rwanda's power sector. Yet, this methodology will be able to shed light upon the barriers some of the foreign investors perceive as most limiting.

Furthermore, as described by Leech (2002, p. 665) "*What you want to know determines which questions you ask. What you already know will determine which questions you will ask*". Based on this argument, there is a risk that how the questions are asked is changed between the interviews, making the interviews slightly different from each other. This may cause issues with the reliability. However, having a semi-structured interview can reduce this validity problem, since all questions follow a pronounced protocol. To conclude, it is clear that there are both benefits and disadvantages with the applied methodology. Furthermore, it is essential to recognize and acknowledge these disadvantages when analysis of the result.

4. EMPIRICS

This chapter provides the reader with the gathered empirical data. The first part of the chapter gives an overview of the interviewees and their background. The second part provides the interviewees' opinions and answers.

4.1 The Interviewees' Background

As described in the methodology chapter, interview 1 and 3 is not a part of the empirical result, hence these are not included in this chapter. In order to facilitate the description of the interviewees' answers, each interviewee is labeled with a letter.

- i) **I. Twagirashema (a)** is the Executive director at the Rwanda Investment Group, Chairman at Energy private developers and one of the two authors to Energy Rwanda (2013). As chairman in Energy Private Developers, Twagirashema has a good knowledge of the barriers the investors face. Furthermore, Twagirashema is also the chairman of Cimerwa, a Rwandan cement producer which recently invested in their own power plant.
- ii) **Interviewee 4 (b)** works as an analyst at one of the government of Rwanda's departments. The department plays an essential role for the Rwandan power sector and influence the investment climate for foreign investors in Rwanda. The department also work closely with other governmental offices and support these offices in their contact with investors. Interviewee 4 has good knowledge about the investment process in Rwanda and the energy sector is one of the interviewee 4's focus areas. The interviewee has frequently contact with the power sectors' investors.
- iii) **D. Klinick (c)** is the CEO of East African Power Ltd, a renewable energy investment and development company based in Kigali, Rwanda. East African Power is the owner of several power producing companies, such as DC Hydropower, Afritech Energy etc. Klinick has an extensive knowledge about the investment climate in Rwanda and its neighboring countries.
- iv) **O. Ekman (d)** is the CEO for the Swedish company First To Know Scandinavia AB. First To Know has an extensive network and they support their clients to find hidden business opportunities. Some of their partner companies, which are developing new energy technologies, have pronounced an interest to expand in to Rwanda's power sector. Ekman is supporting these companies to examine the viability of this expansion.
- v) **H. Karasoy (e)** is the director of HQ Power Rwanda which is one of the largest power investors in Rwanda. HQ Power is currently investing and constructing in a peat power plant which is intended, at the first stage, to contribute with 80 MW to the Rwandan grid (compare with Rwanda's current 160 MW). Karasoy has an

extensive knowledge of the Rwandan power sector and the barriers which foreign investors face. Noteworthy is, peat is not considered as a renewable energy source, which means HQ Power may have different business conditions than the more renewable alternatives. This makes HQ Power to a good complement to the other interviewees.

4.2 The Interviewees' Answers

The interviewees answers are presented jointly, following the structure presented in Appendix 1. The purpose behind each question is further explained in the same Appendix. The letters within the brackets denote which of the interviewees who supported which statement.

i) Which are the reasons why you invested in Rwanda and not in other countries?

All the interviewees express a similar view to why Rwanda's power sector is interesting destination for foreign investments. More specifically, all interviewees express political stability, high electricity demand and low corruption as reasons to why investors see Rwanda as an attractive investment destination (a, b, c, d and e). Furthermore, interviewee 4 (b) elaborate his answer and explain that Rwanda has become one of the most investment friendliest countries in Africa. Several of the neighboring countries cannot offer the same institutional stability as Rwanda can. For instance, the security level in Rwanda is far much better than the neighboring country Burundi and Congo (DRC). This makes Rwanda an attractive choice, especially for smaller entrepreneurs inexperienced of the African continent. Furthermore, interviewee 4 (b) continues to explain that the corruption level in the Rwandan government is exceptionally low which makes Rwanda to an interesting choice for aid organizations to invest in the country. The invested money simply goes where it is intended to go. Ekman (c) support these statements and explain that the low corruption and high security level are two important factors making First To Know to be especially interested in Rwanda. Since First To Know works with smaller entrepreneurs - some looking for their very first FDI opportunity - these factors are considered important by First To Know's clients. Furthermore, interviewee 4 (b) mention that Rwanda recently implemented several investments incentive. Some of these incentives is intended to make the investment process more transparent and easier. For instance, on trial, Rwanda developed and implemented a renewable energy feed in tariff (REFIT) which gave smaller entrepreneurs of renewable energy transparent and profitable power purchase agreements (PPA) in the initial investment phase. The trial of the REFIT incentive ended in December 2015, and it has since then been discussions to implement an updated REFIT incentive in 2016. However, according the interviewee 4 (b), the process to develop the updated version have stranded and it is uncertain whether a new REFIT will be implemented. Another example of how the Rwandan government tries to facilitate for foreign investors in Rwanda's power sector is by mapping out and marketing potential hydropower sites in Rwanda (c). Furthermore, Rwanda is currently developing investment incentives for off-grid solutions and the incentive is going to be presented in the second half of 2016 (b).

Karasoy (e) describes Rwanda as a country with a good reputation and with a robust political situation, which partly depends on its strong and successful leader. However, the reason why Hakan AS invested in Rwanda depends on several additional factors. Hakan has it primary base in Turkey and the company was, for couple of years ago, approached by Rwandan officials who were interested of Hankan's investments. Rwanda has a huge peat supply and the country wanted to examine the possibilities to use its supply for electricity. In order to attract Hakan to Rwanda, Hakan was offered several beneficial incentives such as tax reductions and a beneficial PPA. Karasoy (e) explains that the first impressions of Rwanda and its government were

excellent. Karasoy (e) continues to explain that this area is vital in order to attract FDI. It is of great importance that the government officials make the investors to feel appreciated and welcomed to the country. Several other countries have not succeeded in the same way as Rwanda has. Hakan is now investing in an 80 MW peat power plant, which compared to Rwanda's current capacity of 160 MW, will increase the country's power capacity significantly.

ii) Which institutional barriers have you experienced in Rwanda and what could the Rwandan government do in order to reduce these barriers and hence improve the business climate?

All interviewees had interesting comments concerning the institutional barriers present in Rwanda's power sector. Interviewee 4 (b) state that the investment process in Rwanda's power sector is rather demanding and involves several critical stages. This is particularly true for investments larger than 5 MW. The government of Rwanda controls many of these stages and do hence, have an influence over which companies which reach to the final implementation and investment stage. Furthermore, Interviewee 4 (b) argues that this demanding process is necessary in order to control that only "good" and suitable investors enter the market. In many ways, the electric power sector differs to many other sectors due to its importance for the country's development and due to the long contracts which are involved. According to Interviewee 4 (b), it is not uncommon with 25 years PPA and the government is hence keen to not sign unfavorable contract. Furthermore, Interviewee 4 (b) explain that due to these reasons, long and controlled investment processes is common in most counties' power sectors. Moreover, Interviewee 4 (b) explain that the relation between the numbers of investors entering the first governmental controlled stage compared to the number of the investors that actually goes through all stages is significant. However, Interviewee 4 (b) state that the institutional processes shouldn't be blamed for all the "losses" of investors. Some of the companies have too optimistic views on the investment process or in other cases represent a technology which is not economically viable. Yet, the fact that only a small minority of all interested investors actually fulfill their investments is according to Interviewee 4 (b) problematic. Rwanda is in need of more investments and a several of the investors do not leave the investment process because they are excluded by the government, but due to other reasons. According to Interviewee 4 (b), this circumstance indicates that there are barriers preventing investors to enter the Rwandan power sector. Furthermore, interviewee 4 (b) explain that lack of financing and internal business events are common reasons to why investors leave the investment process.

Twagirashema (a) agrees that financing is problematic in Rwanda and explain that the financing situation cause several challenges for all power investors in Rwanda. Firstly, even exceptionally profitable power investments may be rejected by the Rwandan banks. Limited funds and inadequate knowledge are the two main explanations. In a matter of fact, Twagirashema (a) state that there is no single bank in Rwanda who has an employee specialized in the power sector. This result in banks which do not understand the power projects, and hence, tries to avoid these projects. Secondly, the interest rates are exceptionally high and it is not uncommon with interest rates far beyond 10 percent. These circumstances force the foreign investors to finance their investments by other means.

Klinck (d) state that the institutional barriers for FDI in Rwanda's power sector depends on the power technology. Klinck (d) elaborate on three different energy technologies and starts to explain about the barriers for hydropower. According to Klinck (d), it is unfortunate that the government haven't been able to prolong the REFIT. Rwanda is in need of standardized PPA which are bankable. Standardized PPA makes the investment climate more transparent and it is essential for investors to, in an early stage, be able to calculate on the investments viability and profitability. Furthermore, the Rwandan government should be transparent with their already contracted PPA, making it easier to benchmark with other investors. Klinck (d) conclude his argument about the standardized PPA to say that this will be an essential area for the Rwandan government in order for Rwanda to be able to keep investors and developers in the market. Klinck (d) continues his argument about hydropower by explaining the need of standardized concession agreements. The concession agreement gives the investor and developer the access and right to construct and operate on the hydropower site. Klinck (d) explains that there are several uncertainties connected to the concession agreements. Firstly, it is not easy to get access to the hydropower sites and the competition about the sites is fierce. Secondly, the government should be more transparent about which measures the government use when they chose to sign a concession agreement with an investor or developer. Furthermore, another barrier for hydropower investors is the lack of a well-functioning financing mechanism which makes the local currency more accessible. Moreover, Klick (d) points out that the Rwandan government needs to approve on a standardized investments process which is similar to all investors. Klinck (d) end his argument about the investment barriers for hydropower by describing challenges with one of his own projects – DC Hydropower. DC Hydropower have for two years worked on its project to develop two hydropower sites in Rwanda. Yet, DC Hydropower haven't been able to sign all necessary contracts with the government. This means that significant investment needs to be done even before the investors know if they will get access to a hydropower site with a bankable PPA. DC Hydropower have so far been financed by aid organizations, which according to Klinck (d), is necessary for smaller entrepreneurs to be able to profitability develop hydropower sites in Rwanda. Dependency on aid organizations also creates uncertainties and risks connected with the accessibility to these donor moneys.

When it comes to solar, the barriers look slightly different. Off-grid solutions will play an increasing role in the power supply of Rwanda. Commercial and industrial solar is increasingly important in this areas. However, Klinck (d) points out that major institutional barriers currently prevent industries to develop their own solar projects. Hence, the Rwandan government needs to change its legislation and allowing industries to enter the power generation market. Actions necessary is changing the agreements for net metering and standardizing the agreements with Rwanda Energy Group (REG). Furthermore, since solar's importance, the government should consider tax reductions, VAT exempts and other incentives for industries generating their own electricity.

Similar to Klinck (d), Ekman (c) points out the uncertainties connected to the PPA and the concessions agreements as major barriers for FDI in Rwanda. Understanding the investment conditions in an early stage is necessary for smaller entrepreneurs who willing to invest in Rwanda's power sector. Due to the lack of standardized PPA and concessions agreements, it is

difficult for investors to get a holistic understanding of the price levels and available hydropower sites. Ekman (c) continues to describe that Rwandan government has developed several incentives which is intended to attract foreign investors. However, it is important that these incentives are coordinated, creating a transparent investment climate. Ekman (c) request transparent and similar conditions for all investors.

An interesting topic which were raised by three of the interviewees (b, c and d) were the risk of short term “energy surplus”. Indeed, Rwanda has one of the lowest per capita energy consumptions in the world. Yet, several energy projects are under development and Rwanda is likely to double its energy supply within a few years. The objective to connect 48 percent of the population to the domestic power grid may be too optimistic and hence, there is a risk of energy surplus. According to interviewee 4 (b), this is a growing concern for the Rwandan government. The government tries to avoid a situation where the government pays for electricity which is not used. This concern has made the government more restrictive with it PPA and is hence creating uncertainties for the power investors. Furthermore, Interviewee 4 (b) illustrate the condition as an “chicken-and-the-egg situation: *“You need electricity in order to create demand, and demand in order to create electricity”*. However, Karasoy (e) is of a different point of view. He admits the supply will increase drastically within the next coming years but ask a rhetorical question to describe his opinion: *“How many African countries have you heard of which has too much electricity?”*. Karasoy (e) continue to argue that the increased connectivity rate and the growth of domestic industries will require significant power, and hence, a noteworthy domestic surplus is unlikely. Furthermore, Karasoy (e) explain that Rwanda is about to connect its power grid to its neighboring countries in the east, which will allow Rwanda to export electricity in the case of energy surplus. A situation where the east African countries has excess of electricity is according to Karasoy (e) not going to happen in a near future.

Moreover, Karasoy (e) explain that the institutional barriers present in Rwanda depends on the investment’s scale and technology. Barriers for larger investments, such in the case of Hakan’s investment, are connected to the government’s lack of know-how of handling these sizes of investments. Since know-how is developed through experience, it is according to Karasoy (e) understandable Rwanda lacks these skills. The country has never signed a PPA as large as Hakan’s, and hence, Rwanda’s institutions lack a holistic understanding of which risks which needs to be covered by the government. In lager projects, it is necessary with individual negotiations in order to secure beneficial contracts for both the investors and the government. However, for smaller projects, the investment process should be standardized. Smaller entrepreneurs do not have the financial strength to participate in long and expensive negotiations. Hence, it is important that the Rwandan government create a smooth way in for these entrepreneurs. Karasoy (e) continue to describe various challenges depending on the type of technology. Hakan is developing a power plant which is based on fossil-based fuel. Hence, the possibilities to get financing for NGOs (Non-Governmental Organizations) are limited due to NGO’s aversion to support these kinds of projects. Hence, Hakan has to be economically viable without these kinds of market interactions, which put pressure on Hakan’s ability to create a profitable business model without external support. However, Karasoy (e) continue to

claim that getting excluded by donors isn't necessary a disadvantage. The NGOs creates uncertainties and dependency, which in some cases prevent suitable investors to enter the Rwandan market.

iii) Would these measures (implementing the actions mentioned in question ii) result in more/earlier investments from your side?

All the interviewees argue, to some extent, that reducing the institutional barriers for FDI in Rwanda's power sector would lead to more and earlier investments (a, b, c, d and e). Karasoy (e) states that there are several things that the Rwandan government could do in order to foster more and earlier investments. As an example, if the Rwandan government would have been more experienced and efficient in negotiating the PPA, Hakan would have reached further in their construction by now. However, Karasoy (e) points out that Rwanda already done a lot to enhance the business climate. The government are developing its know-how, use good incentives such as tax reductions and beneficial PPAs, and are increasing its knowledge about its power sector. Considering the state Rwanda was in for 20 years ago, the progress has been remarkable. Karasoy (e) emphasize, that from a realistic perspective, one couldn't expect the government to have reached any further.

Klinck (d) is certain reduction of Rwanda's institutional barriers would lead to more, and especially, earlier investment. As an example, constructing DC Hydropower's power plant would only take three months. If the government had standardized PPA and concession agreements, the power plant would already be up and running.

Ekman (c) explain that reducing Rwanda's institutional barriers would facilitate for the foreign direct investors to in an early stage decide whether they should continue with their investments or not. Ekman (c) points out that the Rwandan government have done several improvements, but still emphasise the importance that the government continue on this path. An unclear investment processes may risk investors to avoid Rwanda.

Interviewee 4 (b) argue that the government still have to develop and improve the business climate for foreign investors. However, it has to be done in a controlled and responsible manner.

Twagirashema (a) explain that the Rwandan government still have several improvements to make, especially in the area of off-grid solutions and financing. Twagirashema is likely to continue to invest in Rwanda's power sector, yet he requests an improved business climate.

5. ANALYSIS

In this chapter, the empirical findings are analyzed and compared with previous research. Furthermore, since the purpose of this thesis is to identify how the institutional barriers the foreign investors perceive the barriers, this chapter also discuss which of the identified barriers which are perceived as most important by the investors.

The literature review shows that several institutional barriers may prevent foreign direct investors to enter new markets. Some barriers are general for all industries, while others focus on the power sector specifically. The empirical findings show that most of the barriers discussed in the literature review, also is considered important by the foreign investors in Rwanda's power sector. Table 2 present the barriers which has been discussed in the empirical findings and the literature review. Moreover, Table 2 also shows whether the interviewees of this research consider the identified barriers to be of great negative importance for Rwanda's power sector (key barrier in Rwanda's power sector). It is important to acknowledge that some of the barriers are overlapping and hence may be depended on each other. Furthermore, several of the barriers are connected to governmental regulations. Therefore, this barrier has been divided in to nine sub-barriers.

Table 2 – Coherence between theory and empirical findings

Institutional Barriers	Theory	Empirical Findings	Key barrier in Rwanda's power sector
Political instability	Yes	Yes	No
Corruption	Yes	Yes	No
Low domestic security level	Yes	Yes	No
Investment incentives	Yes	Yes	To some extent
Poor energy planning	No	Yes	Yes
Insufficient transparency	Yes	Yes	Yes
Poor financing institutions	Yes	Yes	Yes
Lack of know-how	Yes	Yes	To some extent
Risk connected to the foreign exchange rates	Yes	No	No
Poor governmental regulations	Yes	Yes	Yes
<i>Ownership restrictions</i>	Yes	No	No
<i>Rate of return restrictions</i>	Yes	No	No
<i>Risks associated with project approval process (delays etc.)</i>	Yes	Yes	Yes
<i>Ambiguity of relevant laws and regulations</i>	Yes	Yes	Yes

Institutional Barriers	Theory	Empirical Findings	Key barrier in Rwanda's power sector
<i>Poor electricity pricing methods that not represent the costs</i>	Yes	Yes	To some extent
<i>Risk related to weak contract enforcement</i>	Yes	No	No
<i>Credit risks of power purchaser</i>	Yes	No	No
<i>Lack of standardized PPA</i>	Yes	Yes	Yes
<i>Lack of standardized concession agreements</i>	Yes	Yes	Yes

As show in table 2, the barriers discussed in the literature review, is often considered to be important by the foreign direct investors in Rwanda's power sector. However, it is also clear that Rwanda successfully have manage to reduce the influence of some of the barriers.

Adeleke, Olowe and Fasesin's (2014) points out that **political stability, low corruption and high domestic security level** are vital in order to attract foreign investors. A country which it not able to provide these fundamental business elements may create barriers perceived as frightening for new foreign investors. The empirical findings support this statement and all the interviewees state that political stability and low corruption are important elements in their investment decisions (a,b,c,d and e). Furthermore, some of the interviewees (b, c and e) claim that the security level has been considered in their investment decisions. However, the interviewees seem to be united in this matter. Rwanda has successfully managed to avoid these barriers and none of the interviewees claim that any of these potential barriers are problematic for foreign investors in Rwanda. On the contrary, political stability, low corruption and high domestic security are reasons why investors are interested of Rwanda. Furthermore, Adeleke, Olowe and Fasesin's (2014) and Interviewee 4 (b) agrees that this is not the situation in all African countries.

Blomström and Kokko (2003) argue that **investment incentives** are increasingly important and state that lack of beneficial investment incentive may make investors to choose other markets. It is clear that investment incentives also are considered to be important by the interviewees of this research. Karasoy (e) explains that investment incentives, such as tax reductions and a beneficial PPA, was essential in their investment decision. Hence, in the case of Hakan AS, it seems like Rwanda managed to provide sufficient amount of investment incentives to attract the investor. Interviewee 4 (b) explains that Rwanda has several investment incentives and that more are to come. Investment incentives for off-grid renewable energy solutions is mentioned as one example. However, the empirical findings indicate that the investment incentives are not to the full satisfaction, causing the investors to invest less or later. Ekman (c) acknowledge that Rwanda has managed to establish several beneficial investment incentives, however, the incentives is not fully coordinated nor transparent. Ekman (e) continue to explain that the investment incentives to some extent is negotiated, resulting in different conditions for the

investors. This hamper a smooth and clear investment process. Klinck (d) explains that the barriers present in Rwanda's power sector depends on the type of energy source, so also for barriers related to investment incentives. According to Klinck (d), Rwanda need to develop more investment incentives and mention the solar sector as one important area to work with. To conclude, Rwanda has through implementation of investment incentives managed to reduce some barriers connected to this area. However, the lack of clear and transparent investment incentives is still perceived as a barrier by some of the foreign direct investors in Rwanda's power sector.

Some of the investors (c and d) discussed the possibility of short term energy surplus as a risk for potential investors. Ekman (c) explain that the Rwandan government has been ambiguous in their communication of its need of power investors. On one hand, the government communicate the country's tremendous need for more electricity. On the other hand, the government seem to be afraid of too many investors. Government officials (b) confirm Ekman's (c) concern and explain that the government is uncertain of how much electricity the country needs and when the country will need it. This creates uncertainties for the foreign investors and Klinck (d) explains that the risks of short term energy surplus make the investors hesitating. Hence, it is clear that **poor energy planning** is a barrier which creates uncertainties and risks for some of the foreign power investors in Rwanda. This barrier was not covered by the previous literature which has been examined in this research.

Insufficient transparency can be connected to many other barriers and can occur in several stages of the investment process. Adeleke, Olowe and Fasesin (2014) explain that lack of transparency is one of the reasons why some foreign investors avoid investments in Nigeria. Lack of transparency also seem to be some problematic in Rwanda. Interviewee 4 (b) explain that the concession agreements and power purchase agreements are confidential, making it difficult to compare power project against each other. As previously described, this is also a concern for Ekman (c) and Klinck (d) who believe the lack of transparency creates barriers for the investors. According to Ekman (c), the low level of transparency can make it easier for the government to apply different contracts and conditions for different investors, on one hand increasing the government's bargaining power. However, according to Ekman (c) and Klinck (d), the low transparency also keeps some of the investors away from the country.

Poor financing institutions is problematic for some investors in Rwanda (a and d). Twagirashema (a) explain that the access to affordable loans is limiting investments in the country. Klinick (d) agrees and explain that the access to the local currency is difficult. Also the previous research have identified poor financing institutions as potential barrier. Similarly, Soubbotina and Sheram (2004) claim that easy convertibility to the local currency is essential for foreign investors.

Blomström and Kokko (2003) explain that the **governmental know-how** has a major influence on foreign investors. Karasoy (e) also discuss the governmental know-how and claim that the lack of know-how at the governmental institutions is problematic in Rwanda. According to Karasoy (e), the lack of know-how makes the investment process slow and the government has not been able to establish well-functioning routines for the investment process. Yet, Karasoy

(e) emphasize that this is understandable considering that Rwanda has been forced to develop all its routines during the last 20 years.

Risk connected to the foreign exchange rates is according to Blackman and Wu (1998) a potential barrier for foreign direct investors. Only one of the interviewees, Karasoy (e), discussed the risks associated with foreign exchange rates. According to Karasoy, Hakan AS has managed to hedge the risk, and hence, risks associated with foreign exchange rates is not considered to be of any substantial relevance for Hakan.

A significant amount of the previous research identifies **poor governmental regulations** as a potential barrier for foreign investors. For instance, Blomström and Kokko (2003) explain that trade policies and other governmental regulations are central determinants for foreign investors' investment decisions. Similarly, Soubbotina and Sheram (2004) explain that liberal government regulations are essential elements in investors investment decisions. Among the interviewees, a majority believes that the governmental regulations in Rwanda are, to at least some extent, problematic for Rwanda's power sector (b, c, d and e). Blackman and Wu (1998) points out that governmental regulations could be divided into several sub-barriers. Therefore, this barrier will be examined more thoroughly and is hence divided into nine sub-barriers.

Ambiguity of relevant laws and regulations can be connected to many other types of barriers associated to the government regulations. Blackman and Wu's (1998) research shows that this barrier was perceived as most the most severe barrier by the foreign investors in China's power sector. To some extent, this is also true for the foreign investors in Rwanda's power sector. Three of the interviewees (c, d and e) points out that the lack of **standardized PPA and concession agreements** are severe barriers for the foreign investors in Rwanda, especially for smaller entrepreneurs. The reason why these areas are considered that important depends on the investors' wish to have similar conditions for all investors.

Risks associated with project approval process (delays etc.) is, in Backman and Wu's (1998) research, identified as the second most severe barrier for foreign investors in China's power sector. Ambiguity of relevant laws and regulations may be one reasons to the perceived risks in the project approval process. Interviewee (b) explains that many investors are not able to go through the full project approval process, indicating that barriers connected to this area may be problematic for Rwanda. Klinick (d) described that it so far has taken two years to get all the approvals and all necessary contracts signed, hence creating a barrier for DC Hydropower. Klinick (d) claims that the length of this process is significant, even by African standards. Risk associated with the project approval process is obviously a concern for the foreign investors in Rwanda.

Poor electricity pricing methods that not represent the costs is according to Backman and Wu's (1998) a potential barrier for foreign investors. Interviewee 4 (b) explain that the PPA not always represents the productions costs. This is especially true for environmental friendly sources of energy. The reasons is that the government assume that the power producers get financed by NGO, and hence include this in the calculations. Klinck (d) believes this fact is a bit problematic. Dependence on NGO increase the uncertainties for the investors.

Rate of return restrictions, Risk related to weak contract enforcement, Credit risks of power purchaser and Ownership restrictions is covered as potential barriers by the previous literature, but was not mentioned as barriers during the interviews. Blackman and Wu (1998) describe that ownership restrictions is one of the least severe barriers in China's power sector. To some extent, this also seem to be the situation in Rwanda.

6. CONCLUSION

Linked to the research questions, this chapter discuss the final conclusions of this research. The chapter ends with suggestions for further research.

This research has identified several institutional barriers present in Rwanda’s power sector and shown how these are perceived by the foreign investors, see table 3. It is clear that the identified barriers prevent some foreign investors to enter the Rwandan power sector. All foreign investors that participated in this research claims that reducing the present barriers would make them to invest more and/or earlier. The barriers also increase the costs for the investors. Yet, the research has also shown that Rwanda has undergone tremendous progress and successfully managed to reduce the influence of some of its barriers – barriers some of Rwanda’s neighboring countries suffers from. Due to this fact, Rwanda has caught several foreign investors interest. Even though it is unclear how much electricity Rwanda will need in the short term, it is obvious that Rwanda, as a country with one of the world’s lowest energy consumption per capita in the world, will need to develop its power capacity significantly in the long term. Even though Rwanda would manage to achieve their ambitious targets to 2025, attracting USD 6.9 billion investments in the power sector, their energy generation will still be far behind the rest of the world. Hence, continuing improving the power sectors attractiveness for foreign investors will be essential in order for continued economic development.

Table 3 – Institutional barriers for FDI in Rwanda’s power sector

Potential Barriers	Perceived as barrier by the investors
Investment incentives	To some extent
Poor energy planning	Yes
Insufficient transparency	Yes
Poor financing institutions	Yes
Lack of know-how	To some extent
Poor governmental regulations	Yes
<i>Risks associated with project approval process (delays etc.)</i>	Yes
<i>Ambiguity of relevant laws and regulations</i>	Yes
<i>Poor electricity pricing methods that not represent the costs</i>	To some extent
<i>Lack of standardized PPA</i>	Yes
<i>Lack of standardized concession agreements</i>	Yes

It is important to acknowledge the limitations of this research. The empirical data is based on five interviews. Given the extent of the power sector, it is unlikely that this study has been able to identify all institutional barriers which prevent foreign investors to invest in Rwanda’s power sector. Yet, the result of this thesis identifies the institutional barriers some of the key investors perceive as most limiting.

Similar to previous research, this thesis shows that barriers for foreign investors is country and sector specific. Hence, it is of importance to examine barriers for even more sectors.

Previous research has shown that some barriers is important, creating a healthy industry which prevent unserious investors to enter the market. The purpose of this thesis hasn't been to examine whether the present institutional barriers are beneficial for the country nor trying to explain which of the barriers which should be eliminated or reduced. However, it appears that some of the identified barriers create more damage than benefits.

To conclude, Rwanda reached far in its creation of an efficient and an investment friendly business environment. However, Rwanda needs to continue to reduce its institutional barriers in order to keep and attract foreign investors.

6.1 Further research

As previously mentioned, the purpose of this thesis hasn't been to identify which of the present barriers the Rwandan government should keep, reduce or eliminate. Further research could hence focus on determining which of the barriers which is necessary to keep and which of the barriers that should be eased or removed. Furthermore, this research has shown that the barriers are country and sector specific. Hence, in order to get a holistic understanding of the barriers for foreign investors, it is of importance to examine even more countries and sectors.

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8. APPENDIX



UNIVERSITY OF GOTHENBURG SCHOOL OF BUSINESS, ECONOMICS AND LAW

Semi-structured interview:

Institutional Barriers for Foreign Direct Investment in Rwandan Power Sector

- vi) **Introduction and presentation of my research.**
- vii) **Could you briefly describe your company and your project in Rwanda?**
Purpose: To confirm I understood the project properly and to get an update about the projects current situation.
- viii) **Which are the reasons why you invested in Rwanda and not in other countries?**
Purpose: This question is intended to opening up the discussion. Furthermore, it gives an indication of which barriers which may not be present in Rwanda and which the incentives are for investing in the country.
- ix) **Which institutional investment barriers have you experienced in Rwanda?**
Purpose: This is the main question and is intended to give a good understanding of the investments barriers for foreign investors.

Follow-up questions:

- 3) Are these barriers also available in other countries (Sub-African or the country of your origin)?
- 4) Considering your firm-specific conditions, do you think you experience (or do not experience) barriers which other firms may experience? (Domestic vs. Foreign, Type of energy source, Large vs. Small, etc.)
- x) **What could the Rwandan government do in order to reduce these barriers and improve the business climate?**
Purpose: To get an understanding of which barriers that could be reduced and to get an indication of which of the barriers the investors perceive most limiting.
- xi) **Would these measures (implementing the actions mentioned in question v) result in more/earlier investments from your side?**
Some barriers may be seen as inconvenient or as "profit-limiting" for the investors, but may not change their investment behaviour. This question is intended to give an understanding of the sensitivity among the investors.

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