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Country risk perceptions and responses towards private-sector investments in renewable energy (re) in Sub-Saharan African countries: A comparative study of Tanzania and South Africa

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UNIVERSITY OF WITWATERSRAND, SCHOOL OF ARCHITECTURE AND PLANNING

COUNTRY RISK PERCEPTIONS AND RESPONSES TOWARDS PRIVATE-SECTOR INVESTMENTS IN RENEWABLE ENERGY (RE) IN SUB-SAHARAN AFRICAN COUNTRIES: A COMPARATIVE STUDY OF TANZANIA AND SOUTH AFRICA

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A research report submitted to the Faculty of Engineering and the Built Environment, University of the Witwatersrand, in partial fulfilment of the requirements for the degree of Masters of Architecture in Sustainable and Energy Efficient Cities.

Johannesburg, 2018

Declaration

I declare that this research report is my own unaided work. It is being submitted to the Degree of Masters of Architecture in Sustainable and Energy Efficient Cities to the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination to any other University.

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Abstract

The sub-Saharan Africa (SSA) region possesses immense magnitudes of renewable energy (RE) resources, while at the same time suffering from low electrification rates. Faced with inadequacy of public-sector funding for scaling-up electrification, the respective governments face the daunting challenge of facilitating private-sector investor-participation in the sector.

As a methodological strategy, the study hypothesised that sovereign credit ratings influence the level of participation of private sector investors in the SSA region and its countries. Based on a comparative case study method and a qualitative study approach (with primary data collected through interviews and secondary data captured from relevant national policies and sovereign credit risk reports), the study argues that the sovereign ratings and disjuncture in public sector responses to prevailing risk perceptions contribute to the varying RE-investment levels in the case study countries of Tanzania and South Africa.

The study finds that sovereign credit-risk ratings by “cartel-like”, west-based credit-rating agencies influence country-risk perceptions of private-sector investors and consequently the level of RE-investments in SSA. The study also finds that country policy responses and compliance towards mitigation of private-sector investment risks are relatively weak in Tanzania compared to South Africa. The study substantiates on this finding through a comparison of the relatively low level of RE-investment in Tanzania compared to that of South Africa in reference to their respective country-risk profiles. As market opportunities are greater in Tanzania, differences in the risk perception profiles is argued to be the factor that primarily accounts for their contrasting level of RE-investments.

The study therefore finds that high-risk perceived SSA countries are not systematically pursuing more convincing commitments to governance and policy certainty in order to improve on their private-sector risk-perception profiles especially as administered by risk rating agencies. Existing studies argue that such alignment could be deemed as detrimental to political autonomy as commonly argued by the region’s political regimes as well as political analysts, who often associate such ratings as hidden manipulations aimed at deepening the strangle-hold of neo-colonialism. It is therefore critical to extend the findings of this study on this persistent concern of SSA governments in order to expedite the unlocking of private-sector participation in RE-investment opportunities in the region which would in turn improve on the prevailing low electrification rates.

Key words: South Africa, Tanzania, sub-Saharan Africa, renewable energy, private-sector investment, country risk profile, sovereign credit rating.

Dedication

My parents, the late Prof. Bruno Ndunguru, and my mother, Magdalena Ndunguru.

My siblings, Joyce, Colleta, John and Neema, as well as their spouses and children.

The rest of my family and friends.

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Abbreviations and Acronyms

BW	Bid Window
CRA	Credit Rating Agency
DFI	Development Finance Institution
DoE	Department of Energy
DTI	Department of Trade and Industry
EWURA	Energy Water and Regulatory Authority
FDI	Foreign Direct Investment
FiT	Feed-in Tariff
ICSID	International Centre for Settlement of Investment Disputes
IPP	Independent Power Producer
IRP	Integrated Resource Plan
MIGA	Multilateral Investment Guarantee Agency
MoE	Ministry of Energy
MW	Megawatt
OECD	Organisation for Economic Co-operation and Development
PPA	Power Purchase Agreement
PV	Photovoltaics
RE	Renewable Energy
REIPPPP	Renewable Energy Independent Power Producer Procurement Program
S&P	Standard and Poor's
SSA	Sub-Saharan Africa
SPP	Small Power Producer
SPPA	Standardized Power Purchase Agreement
SPPT	Standardized Power Purchase Tariffs
TANESCO	Tanzania National Electricity Supply Company
TPSEPD	Tanzania Private Sector Energy Projects Developers

Chapter 1: Introduction and motivation for study

1.1 Introduction

African countries suffer from low electrification rates and thus exhibit major backlogs in both related infrastructure and services (Eberhard *et al.*, 2017). With insufficient power generation, dispersed populations, and limited infrastructure to distribute power nationwide, sub-Saharan Africa (SSA) countries now acknowledge the tremendous potential of renewable energy (RE) projects as cost-effective and sustainable initiatives to address low electrification backlogs ((*ibid.*) - Appendices C to F present some data with regard to the low electrification rates as well as the high potential of RE in SSA). On the other hand, RE power generation projects are capital intensive and only achieve returns in the long term with 8 to 15 years as the typical period (Williams *et al.*, 2015). With a longer expected return period comes a greater need to mitigate the additional risks, especially for private-sector investors. Given that developing country governments often do not have the budgetary resources to proceed with these capital-intensive projects on their own, they need to acknowledge and systematically engage private-sector expertise and investment in the energy sector (Eberhard *et al.*, 2017). However, as stated by Williams *et al*. (2015), regions such as SSA are viewed as high-risk environments for private-sector investments.

1.2 Background

Due to an inadequacy of public-sector funding for electrification in SSA, governments need to facilitate for private-sector participation mainly through mitigating related investment barriers. Williams *et al.* (2015) categorise these barriers under financial, institutional, and technical factors. For a private or public-private partnership (PPP) project, a business opportunity with significant return is required as an incentive to counter the high-risk profile and perception of the countries concerned. The financial barriers arise from affordability, insecure revenues, and access to finance. According to Williams *et al.* (2015), the institutional barriers arise from the gaps in policies and legal frameworks of a country and thus need to be systematically addressed in order to convince investors on mitigation of risk on their investments. This also entails the role and effectiveness of key institutional structures as well as the administration of policy and regulations.

The technical barriers relate to the location, technology, and skills available for the project. These barriers increase the risk on investment and therefore require mitigative interventions in order to encourage private-sector investors on RE projects in a given country. This study primarily focuses on the financial and institutional barriers of RE projects and the evolving

mechanisms towards addressing the barriers. This was based on a comparative study of South Africa (as a country which has experienced a steady flow of such investments) versus Tanzania (as a country which is only now starting to respond to such barriers).

1.3 Problem statement

With the low electrification rates and relatively high RE potential in the SSA region, the inadequacy of public sector funding, motivating the need to engage and promote private-sector investment in the sector, and the range of existing interventions to promote RE-investments as discussed by Williams *et al.* (2015), what are the challenges leading to the relatively low levels of private sector investment in the region?

A common mechanism adopted in many countries worldwide for private-sector developed RE projects is the use of Power Purchase Agreements (PPAs). This is an incentive-oriented agreement between the government and an Independent Power Producer (IPP) which can also guarantee contracted premiums for the sale of power to the power utility of the country. This is usually based on kilo-Watt hours (kWh) produced for a pre-determined duration (often in the range of 20-years). Premiums are incorporated in feed-in tariffs (FiTs) which vary depending on factors such as the country/project risk, RE technology used and whether the power producer is on/off-grid (Eberhard *et al.* 2016). A fundamental challenge under such PPAs lies in the derivation of affordable premiums which could mitigate prevailing risk perceptions of SSA countries. An additional challenge is on how to improve on the perceptions given the chequered history of political stability accompanied by weak practices in enforcement of property rights through legal and judicial systems of the respective countries.

1.4 Rationale for study

With responsive interventions coming into effect for RE-investments in the SSA region, RE-project developers are still struggling to secure affordable financing for RE projects in the region due to the region continuing to be perceived as a high-risk environment. This study explored the causes and influences for this negative risk perception in order to understand what countries are doing to counter this perception as well as what is causing the relatively lower levels of private-sector RE-investments in the region.

1.5 Aim

The study substantiates on the status quo high risk perceptions of the SSA countries and how country risk profiles, risk perceptions and risk mitigation measures influence private-

sector participation in RE development in SSA countries in order to ultimately evaluate the measures that the case study countries are taking to expedite RE-investments.

1.6 Main research question

The key research question which guided the study was formulated as follows:

How are the various sub-Saharan African countries addressing their prevailing high-risk profiles with regard to attracting private-sector investment in RE development and operation, and how do the varying levels of feed-in tariffs relate to the risk profiles of the various countries?

1.7 Sub-questions

In order to address the overall question, data collection and analysis were guided by the following sub-questions:

- What is the status quo risk perception and profiles of the region and the respective countries?
- What are the existing levels of private sector RE-investments and related risk perception mitigation interventions?
- How do other interventions such as government guarantees feature in risk mitigation towards RE project developments in the respective countries?
- To what extent are the tariffs and tariff premiums effective as mechanisms towards risk mitigation in the two case study countries?

1.8 Working hypothesis

The study started with the working hypothesis that the prevailing scenario of the relatively low levels of private sector investments towards RE in the SSA region, amidst an environment of low electrification rates, high RE potential and inadequate public-sector funding, is primarily due to the perceived high-risk profile and inadequate responses to private sector investors' perceptions of the risk profile.

1.9 Definition of terms

Avoided cost: The cost the power utility would incur to produce the power itself or buy the power from a non-renewable power provider.

Capacity charge: Capacity charges are fees charged by electricity providers in order to accommodate for peak demand capacity regardless of the actual demand.

Escrow: An escrow is a temporary account held by a third party on behalf of two other parties during the process of completing a transaction. The funds or assets are released by the third party only when it receives the required instructions or when the predetermined contractual obligations are fulfilled. Money, securities, funds, and other assets can be held in an escrow (Investopedia, 2018).

Foreign direct investment (FDI): "Investments made by a company or individual in one country in business interests in another country" (Investopedia, 2018b).

Utility: The power utility of the respective country (usually state-owned).

The big three: For this study, the big three refers to the top three global credit rating agencies which are Moody's, Standard & Poor's (S&P), and Fitch Ratings (Fitch).

1.10 Delimitation of scope

The geographical spread of the study is the sub-Saharan Africa region and its member countries which are defined by the World Bank's listing of 48 countries in Africa (World Bank Group, 2018). Although the two case study countries are members of the Southern African Development Community (SADC), whose members trade power under the Southern African Power Pool (SAPP), this entity and its activities were delimited from the scope of this study.

Even though RE-resource abundance and low electrification rates for the SSA region countries have been used to motivate the study, they have been systematically reported in other studies. They are therefore considered to be out of scope for the study. However, Appendices C to F sample data on these aspects. The electrical generation capacities of the countries presented in the study are based on their existing greenfield (operating) capacities at the time of the study and do not consider potential rehabilitations of existing generation facilities in the respective countries. Although renewable energy and energy efficiency interventions are both in line with the climate change interventions for the Sustainable Development Goals (SDG), this study is limited to realising renewable energy investments (for electricity generation) in the SSA region.

In the study, the risk profiles of the countries are reflected by the sovereign credit ratings from the major rating agencies (Moody's, S&P, and Fitch). During the time of the study, Tanzania, was issued its first credit rating by one of the major credit rating agencies. This

has led to the recommendation for further studies to reflect on the impact that this changed scenario would have on the insights emerging from this study. Due to the vast number of appraisals and criticisms of the big three credit rating agencies, a brief overview of their modus operandi is covered under the literature review (see Section 2.2).

In this study, the level of private-sector investment was limited to being measured by the level of foreign direct investment (FDI). In order to substantiate on the relationship between private-sector investment and country risk perceptions in the region, the research focuses on financial and political risk perceptions of foreign direct investment in the SSA region and in the case study countries. The report does not therefore address the technical challenges regarding RE-investments in the region. Only the key and relevant national policies of the case study countries were reviewed in order to gain perspective on the respective government's position with regards to private-sector investment concerns. It should be noted that the results and conclusions are based specifically on the researcher's data and analysis and can be expected to differ from prevailing opinions on the key issues of the topic.

1.11 Chapter outline

This section presents the structure of the report based on a brief outline of the content of each chapter. The study was prompted by the apparently weak participation of private-sector RE-investors in the sub-Saharan Africa region despite the noticeably high level of potential RE-resources as well as low electrification rates. Chapter 1 motivates on the rationale of the study by providing a background, problem statement and aim. The chapter also presents the research sub-questions which guided the study as well as the working hypothesis and the delimitation of the scope.

Chapter 2 analyses relevant literature based on the theoretical fields of the proposed study as guided by the research sub-questions. The first section appraises literature on country risk perception as well as credit rating agencies and their methods of operation. The chapter then appraises literature on the constraints to FDI in the SSA region in order to gain insight on the risk perception of private-sector investors towards the region. This is followed by the appraisal of literature which gives insights on public sector responses to negative risk perceptions, followed by a section on the brief background of the energy sector in the two case study countries (a summary of the energy profiles is presented in Chapter 5 - see Sections 5.2 and 5.3). Subsequently, the conceptual approach presents the logic that the study followed in order to substantiate on the main research question as well as the related research sub-questions.

Chapter 3 presents the research design and method by substantiating on the research approach, data collection methods, and data analysis. The case-study approach method was employed based on semi-structured interviews for primary data collection. Secondary data were gathered from reports, journals, and news articles. A review of studies on credit risk agencies ratings, foreign direct investment levels of the region as well as the case study countries were conducted in order to respond to the research sub questions as well as the overall research question.

Chapter 4 presents an analysis of the primary and secondary data towards the substantiation of sub-question 1. The chapter analyses the constraints to FDI in developing countries in order to conceptualise risk perceptions of private-sector investors. Through an analysis of the effect of a credit rating on the level of FDI, the chapter also substantiates on the effect of credit ratings on country risk perceptions. Through a recognition of the sub categories of the top constraint to FDI, which is political risk, the constraints to RE-investments are outlined. Finally, the sub categories of political risk are referred to in order to analyse the respective investment policies of the case study countries and to assess their responsiveness to private sector needs, as well as evaluate the respective country's attitudes towards private-sector investments.

Chapter 5 presents an analysis of primary and secondary data towards the substantiation of sub-question 2 with regard to the level of RE-investments in the respective case study countries. The findings from Chapter 4 on the influence of a credit rating on FDI are demonstrated through the high-levels of RE-investment in South Africa in relation to the investment grade credit ratings of the country and the utility. However, for Tanzania, the findings are demonstrated in relation to its low levels of RE-investment due to the country's lack of credit rating as well as the weak risk perception of its utility entity. The chapter further analyses relevant policies and measures prevalent in each country which can promote or impede participation of the private sector in RE-investments.

Chapter 6 presents analyses of primary and secondary data towards the substantiation of sub-questions 3 and 4 with regard to government guarantees as well as which government entities are entitled to such guarantees. The analysis further substantiates on whether similar guarantees are applicable to RE-investments in the case study countries and briefly summarises other existing measures towards risk mitigation which are available for RE-investments. The chapter then substantiates on the effectiveness of tariff-premiums towards mitigating risk and promoting private sector RE-investments in the case study countries.

Chapter 7 presents the consolidation of findings, conclusion, and recommendations based on the sub-findings from the previous chapters in relation to the main research question in order to draw the overall findings of the study. The chapter cross validates the findings of the study with the literature appraised in Chapter 2. The chapter also addresses the significance of credit ratings on the risk perception of SSA countries as well as the region as whole. As argued in this study, private sector country-risk perceptions are influenced by credit ratings, and therefore, by resorting to being issued and maintaining a credit rating, a country in the SSA region is attempting to address its negative risk profile. The chapter therefore addresses how the case study countries are addressing their negative risk perception towards RE-investments by private-sector investors.

Chapter 2: Literature review

2.1 Introduction

The chapter is sub-divided into four sections which cover the key theoretical fields of the study. The first section appraises literature on credit rating agencies in order to elaborate on the relevance of credit ratings on country risk perception as well as capture the ongoing criticisms around the agencies' operations, especially in relation to the profiling of developing countries. This section also addresses how credit ratings exercise their power through credit profiling towards manipulating developing countries' policies at the risk of promoting a neo-colonial agenda. The second section appraises studies on FDI in the region in order to conceptualise private-sector investors' perceived risks and concerns towards FDI in the region. This is followed by the appraisal of literature which highlight the constraints of RE-investments in the SSA region. The subsequent sections appraise studies on the backgrounds of RE power sectors in the respective case study countries as well as a comparison of the prevailing tariffs in the case study countries.

2.2 Credit risk ratings

Risk perception is based on thoughts, beliefs, and constructs (Sjöberg, 2000). Risk is not a tangible or directly measurable phenomenon as it is based on future events and the future is always uncertain (*ibid.)*. It is therefore important to acknowledge that risk perception is, to a major extent, subjective. Country risk with regard to sovereign debt and private-sector investment is based on the analysis of various factors and figures as well as perceptions arising from inputs by numerous institutions and rankings. However, country risk also entails subjective interpretation by diverse parties and may be prone to biased information and misrepresentations.

Country risk rating/profiling with regard to credit and debt became a major topic of concern to the international finance community due to the rapid growth of international debt from developing nations in the 1970s and the high number of debt rescheduling in the 1980s (Cosset and Roy, 1991). Oetzel *et al.* (2013) state that country risk is a result of political, social, and economic factors of the respective country and the goal of country risk rating is to assist in forecasting political and economic events likely to impair the ability of the debtor country to meet its financial obligations and thus mitigate the risk of an investment from losing money or making less money than initially expected (*ibid.*). Country risk analysis is therefore used by firms as a screening device aimed at avoiding countries with excessive risk as well as to assess particular forms of risk for a proposed project considered for investment in a foreign country.

Country risk analysis/rating is measured and disseminated by numerous service agencies such as Euromoney, Political Risk Services, and the Economist Intelligence Unit (Murimbika, 2017). Cai *et al.* (2016) argue that sovereign rating is the most important indicator of a country's investment environment. Country risk indicators that numerous investors and lenders are influenced by are formulated and administered by credit rating agencies (CRAs). In order to issue a sovereign rating for a country, credit rating agencies generally analyse the historical and projected financial information, industry and economic data, peer comparisons, and details on planned financials of the country (S&P, 2017).

The rating agencies also integrate credit indicators which incorporate payment records inclusive of rescheduling of debt as well as analytical indicators which include political risk, economic indicators, and economic performance forecasts. Overall, CRAs use a combination of economic factors as well as qualitative assessments of political factors in order to issue a rating (IMF, 2010). When referring to a sovereign rating in market analysis, it is in reference to a country's long-term foreign currency rating (IMF, 2010). A rating from a 'reputable' rating agency is seen as essential towards accessing funding from international markets, issuing bonds on external debt markets, attracting foreign direct investment, and promoting financial transparency as well as fostering investor confidence towards a country (Gamiet, 2015).

Taylor (2017) categorises important points to note about credit ratings. Firstly, credit ratings reflect the opinions of what the credit rating agencies think will happen in the future. Unlike auditors, who look backwards and deal with the factual accounting of what has happened, credit rating agencies attempt to predict what will happen in the future. Secondly, ratings are one dimensional tools towards an understanding of fundamental credit risk in order to achieve the economic objective of the bond market, and especially making the market more efficient through better information.

In the case of this report, the bond market is for the issuance of government bonds and relates to the ability of the respective government to pay its debts timeously. Taylor (2017) argues that the smaller the gap between what the bond issuer knows and what the bond buyer knows, the more efficient the market for that bond will be, and credit ratings help to decrease the information gap between the buyer and the issuer. Taylor (2017) also makes the point that, for a bond issuer, a low risk rating will make it cheaper to borrow funds because interest payments to investors will be lower. An investment grade sovereign credit rating, however, does not guarantee that a supplier/creditor will be paid. De Moor *et al.* (2018) argue that a sub-investment credit rating also does not automatically mean that

default on payment is inevitable. A sub-investment grade rating however raises the perception that the expected revenue of the state will decrease and thus the ability of the state to pay back debt is likely to be undermined.

South Africa's National Treasury Budget review of 2017 states that the Government cannot always balance its budget through tax increases and spending cuts. It therefore needs to borrow at sustainable levels in order to fund expenditure (National Treasury, 2017). Borrowing at reasonable cost depends on the lender's perception of the borrower's ability to repay. In bond markets, lenders consider the credibility of a government's macroeconomic framework, the integrity of state institutions, the political environment, and the country's economic growth prospects. These assessments are then captured and reported in terms of sovereign credit ratings.

Although there are numerous CRAs, the 'big three' CRAs which dominate the global market are Moody's Investor Services (Moody's), Standard & Poor's (S&P) and Fitch Ratings (Fitch) ratings (Ioannou, 2016). These agencies have about 95% of the credit ratings market globally (Smale, 2016) and they are deemed to be the most "reputable" CRAs. White (2010) states that credit rating agency fees were initially charged to potential investors to render the services of providing information on the potential risks of investing in a given country. However, due to the realisation of losing profits (attributed to clients photocopying and distributing provided risk reports), as well as the perception that the risk assessments were to the benefit of potential investments to the host countries, credit rating agencies decided to charge the fees to the entity being issued a credit rating as well as fees for the surveillance and maintenance of the issued rating. This opened the door for potential conflicts of interest as the rating agencies could issue upwardly biased ratings in order to retain a client.

Although the agencies' ratings are based on numerous objective components, they have been consistently criticised for their subjectivity. De Moor *et al.* (2018) state that the subjectivity of the U.S. based agencies is perceived in favouritism towards countries which are close to the U.S., in proximity as well as in political relations. The favouritism has also been perceived towards countries which share a common language and common religion (*ibid.*). The ratings are perceived as upwardly bias towards developed countries due to the availability of data which developing countries may not have as readily available which thus creates room for qualitative bias. This can lead to a credit rating which is unrelated to a country's true risk status (*ibid.*). The agencies were also criticised for the lack of transparency on their rating process, especially during the global financial crisis of 2008. Regulators have now required credit rating agencies to increase transparency as well as rely

more on quantitative inputs in their methodologies in order to decrease subjectivity in the manner in which they derive their ratings.

Credit rating agencies have also been criticised for their sources of information (Luitel *et*. *al*., 2016). S&P (2017) report that their maintenance of a country's credit rating is based on data gathered from other rating issuers, their agents and advisors as well as other sources. The report further states that commercial vendors also sell or provide data to S&P that may be used in the ratings which includes economic data, business news, information on new financings, information on defaults and bankruptcies of which they undertake no duty of due diligence or independent verification of any information they receive (*ibid.*). Luitel *et*.*al*. (2016) argue that this allows opportunity for misguided or biased information.

Oetzel *et al.* (2013) state that ratings are expensive to attain and that due to their subjective nature, ratings are prone to human error. This is substantiated with the argument that the ratings are assumed to be based on hard facts when they could possibly be based on superficial and subjective impressions which are not attributable to first hand 'on the ground' research. The study also argues that risk rating services have often failed to anticipate significant economic and political changes which have caused numerous investors to blame the ratings agencies for their failure to warn them of impending crises in cases such as in the East Asian economies in 1997 (*ibid.*).

Ioannou (2016) argues that financing through international capital markets is a recent development for governments. Previously, a government's loan capacity was mostly determined by private sector's capital capacity to lend to the government and the Central Bank's willingness to refinance the bonds. In a time where bank-lending is being replaced by capital market transactions, and governments are increasingly depending on private banks as well as the market for their financial needs, credit worthiness becomes of greater significance. This allows the credit rating agencies an opportunity to enter the market and influence the terms and conditions of financing. This dependence provides the agencies with access to influence local and foreign currency policy which has led to weakened foreign currency policy and greater debt for developing countries (*ibid.)*.

Ioannou (2016) further states that through the need of public sector entities to access financial markets, credit rating agencies have exercised their power through their ratings by directing a country's policies to align with the agencies' terms. The fact that the major credit rating agencies are headquartered in New York City, (mainly as subsidiaries of U.S. and French corporations which were formed during the age of financialization) implies that their agenda is likely to be more aligned towards capitalisation and private-sector interests. They

are not “simply on the side of capital in terms of exhibiting a policy bias in their proposals, as with institutions like the IMF, but they are part of capital itself” (Ioannou, 2016:11). Through their credit rating services, the agencies have thus acted as promoters of neo-liberalism by enforcing western world principles on the rest of the world whilst being disguised as private-sector institutions. This directive has not only guided policy thinking and behaviour patterns of governments, it has also reached the extent of challenging the sovereignty of nations and hence a threat to the ideal of democracy.

Table 1 presents a summary of the sovereign credit ratings of SSA countries from the big three CRAs (as aggregated from literature and credit rating agency reports). Appendix G gives a summary of the credit risk rating tiers of the big three credit rating agencies.

Table 1 Sovereign credit ratings for SSA countries from Moody’s - 5th January 2018 (Source: Moody’s, 2018), S&P - 31st December 2016 (Source: S&P, 2018) and Fitch - 31st December 2017 (Source: Fitch Ratings, 2018)

Sovereign credit ratings from the big three CRAs				
S/N	Country	Moody's	S&P	Fitch
		Rating		
1	Angola	B2	B	B
2	Botswana	A2	A-	
3	Burkina Faso		B-	
4	Cameroon	B2	B	B
5	Cape Verde		B	B
6	Cote d'Ivoire	Ba3		B+
7	Democratic Republic of the Congo	B3	B-	
8	Ethiopia	B1	B	B
9	Gabon	B3		
10	Ghana	B3	B-	B
11	Kenya	B1	B+	B+
12	Lesotho			B+
13	Mauritius	Baa1		
14	Mozambique	Caa3	CC	RD
15	Namibia	Ba1		BB+
16	Nigeria	B2	B	B+
17	Republic of the Congo	Caa2	B-	CC
18	Rwanda	B2	B	B+
19	Senegal	Ba3	B+	
20	Seychelles			BB-
21	South Africa	Baa3	BBB-	BB+
22	Swaziland	B2		
23	Uganda	B2		B+

Key	
	Investment grade rating
	Rating not available/not rated

24	Zambia	B3	[redacted]	B

According to Moody's sovereign ratings, as of the 5th of January 2018, out of the SSA countries rated, only Botswana, Mauritius, and South Africa were rated at investment grade. Out of 20 SSA countries rated, only 15% are rated investment grade. According to S&P sovereign ratings from the 31st of December 2016, the only countries with an investment grade rating in SSA were Botswana and South Africa. Overall, 87%, of the SSA countries rated by S&P have non-investment grade ratings. According to Fitch as of the 31st of December 2017, with respect to SSA countries, no country was rated at investment grade. Thus, the region is generally rated at sub-investment grade and therefore viewed as overall risky for investment. With the status quo of risk perception of the SSA region presented in this section, the next section appraises literature on the constraints to FDI in the SSA region. This sets the scene for the constraints to private-sector investment in the SSA region.

2.3 Constraints to FDI in SSA

Due to the inadequacy of local funding to finance RE-investments globally, foreign direct investments (FDIs) have become a key source of private-sector investment in developing countries. Asiedu (2001:114) argues that "Africa is different" by emphasising that the incentives which attract FDI to non-SSA developing countries do not necessarily have the same response when adopted by the SSA countries. In the explanation for the rationale behind this statement however, the scope in Asiedu (2001) is limited to a summary of the determinants of FDI in developing countries as "real GDP per capita, infrastructure quality, labour costs, taxes and tariffs, openness to trade, and political instability" (*ibid*.:110).

2.3.1 Country risk perceptions (credit ratings)

Asiedu (2001) however further argues that SSA countries receive less FDI than other countries due to their geographic location. The explanation for this is due to commercial risk rating agencies' ratings of SSA countries as riskier than warranted based on the lack of information about individual SSA countries which has led foreign evaluators to perceive their risk profiles as though they constitute one country.

On the other hand, Cantor and Parker (1996) point out that the agencies provide the market with information about non-investment-grade sovereigns that goes beyond that which is available in public-domain data. The study further states that the difficulty in measuring the sovereign risk of sub-investment-grade countries is well known and this is possibly another reason that the credit rating agencies are valued by investors and lenders. This emphasises

the influence of credit ratings on the risk perceptions of private-sector investors as well as FDI, and the outcome of this influence is substantiated through data analysis in Chapter 4.

Other studies such as Cai *et al.* (2016) find that non-OECD countries with low sovereign credit ratings that are geographically located in regions with a higher average credit rating than other regions receive greater amounts of FDI. This finding suggests that investors prefer high-risk investment environments in low national income countries which are situated in well-rated regions. Cai *et al.* (2016) further state that where other regions' ratings are higher, their respective FDI flows are higher. This supports the notion that less FDI will be directed to the SSA region as long as the region has a lower average credit rating relative to other regions in the world. This further emphasises the significance of sovereign credit ratings on FDI as well as the effect of geographical location on country risk perceptions and consequentially, FDI. The study also finds that FDI flows are typically associated with closer bilateral linkages in terms of common language and geographical proximity. In addition, the study finds that higher levels of financial and economic development and openness in recipient countries also tend to foster FDI inflows.

2.3.2 Access to financing

Based on data reflecting higher rates of return on investments in SSA compared to other regions such as Eastern Europe, but experiencing lower net inflow of FDIs, Asiedu (2001) highlights that higher returns on investment do not have a significant effect on FDI in SSA countries as they do for other developing countries. Williams *et al*. (2015:2) state that electrification projects in developing countries rarely hold attractive risk-return profiles on investment. This is because the risk-adjusted return and the uncertainty of returns associated with the perceived risky SSA environment may be too low to convince investors to commit. Olabisi and Stein (2015) highlight that, on average, it costs African countries more to borrow compared to countries in other regions of the world. This implies that high returns on investment still require complementary risk mitigation measures, which in turn means that the risk perception needs to be systematically addressed in order to attract reliable flow of FDI. This directs attention to the influence of sovereign credit ratings as the commonly used guide on risk perception by private-sector investors.

2.3.3 Political risk

Asamoah *et al*. (2016) note that developing countries have continued to pursue policy changes towards facilitating the entry, regulation, and operations of FDIs. This has been done through numerous reforms such as economic partnership agreements, structural adjustment programmes, financial sector adjustment programmes, and economic recovery

programmes. On openness to trade as an influencing factor which promotes FDI in both SSA and non-SSA countries, Asiedu (2001) notes that even though the SSA region (like other regions of the world) have demonstrated changes towards openness to trade, investors do not view such reforms in SSA as credible. Instead, the reforms are perceived to be temporary and mainly driven by aid-conditions of international development institutions and would therefore be prone to reversal once the relevant aid period ends. This highlights the prevailing negative perception on policy continuity in the SSA countries.

The study further emphasises that uncertainty behind government policy led to 150 respondent foreign investors naming the "risk of policy reversal as the most important risk factor in East Africa" (Asiedu, 2001:115). This highlights the institutional barriers to private sector participation referred to in section 1.2 and substantiated under the theme of political risk factors in Chapter 4.

Arising from the appraised constraints, Asiedu (2001:115) highlights how "SSA has been relatively unsuccessful in attracting FDI despite policy reform". These points make the argument that SSA countries' policy initiatives towards FDI promotion do not strategically engage with the prevailing negative-risk perception of the region with regards to private-sector investments. The study therefore concludes that "Africa is perceived as overly risky and therefore a country in the region will receive less FDI by virtue of its geographical location" (i*bid.*:116).

2.3.4 Summary

Studies appraised in this section indicate that credit ratings influence country risk perception as well as access to financing. The studies further indicate that credit ratings are determined by perceived political risks within a country or region. A credit rating influences investors' perception of security on return on investment. The weaker the security-perception, the higher the expected rate of return and thus the higher the cost of borrowing coupled with a lower willingness to commit to long-term investment. Credit ratings therefore influence access to financing especially with regard to private sector finance. It is also important to note that credit ratings are primarily influenced by perceived political risks and therefore factor such risks into the related derivation of the rating. As presented in the sections above, given that private-sector investors have a negative risk perception of the SSA region, the next section appraises literature on public sector responses towards this negative risk perception on RE-investments.

2.4 Public sector responses to negative risk perception

2.4.1 Credit rating and political risk

Asamoah *et al*. (2016) find a positive direct relationship between quality institutions and FDI flow and contend that the SSA region has weak institutions. Schwerhoff and Sy (2017) also argues that a key method to reduce risk is through responsive revisions of policies and institutions which address the overall attractiveness of a country as an investment destination. This can be done specifically through regulatory reform, improvement in government accountability, adhering to internationally recognised good governance programs, anti-corruption policy enforcement, and systematically exercising the rule of law. By addressing these issues, a government can improve on its credit rating as well as that of the respective off-taker utility (usually the state-owned national utility). RE-developers would thus be more confident on the security of payments in order to sustain their operations and be able to service their debts. Eberhard *et al.* (2017) state that IPP contracts should be undertaken with financially viable off-takers, whether these be the national utilities or large private-sector customers. Secure revenue flows are therefore essential towards ensuring the success of IPPs, especially because most of their project-finance depend on debt for their initial-capital investment.

Schwerhoff and Sy (2017) note that developers of RE projects in Africa prioritise governance related risks as the main deterrent for investment in the region. The related risks include regulatory risks (complex bureaucracy, corruption, ad-hoc changes in regulation) and political risks (low-levels of institutional/political stability). In this study, these risks constitute political risk and are substantiated in Chapters 4 and 5. Private-sector investors in Kenya and South Africa specifically noted that governance related risks in the regulation and management of the power sector were of greater importance in risk perception than general political risks (Schwerhoff and Sy, 2017). These risks are substantiated further in Chapter 5.

On the contrary, the study notes that investors do not frequently refer to weak project profitability and other related risks as critical deterrents (Schwerhoff and Sy, 2017). This therefore hints towards political risk factors as being of greater concern as has been argued here above. This highlights on the possibility that high tariff premiums might not necessarily induce a significant response by private-sector investors towards RE in the region in the absence of responsive overlying measures to mitigate policy and institutional risks coupled with well demonstrated political stability. This is substantiated further in Chapters 5 and 6.

2.4.2 Utility structure and policies

Eberhard and Gratwick (2011) argue that, through a combination of interventions, host countries can achieve a better balance between private sector RE-investor needs as well as public sector power requirements. The suggested interventions include the improvement in the investment climate, drawing up and implementing clear and RE-responsive policy, building contingencies such as guarantees into the power procurement planning process, vesting procurement to one agency, and conducting timely and open bidding. In the absence of such approaches, SSA countries are likely to continue offering high tariff premiums in the hope of enticing investors and only later come to realise that they cannot sustain the payments. These points are pursued further in Chapters 5 and 6.

Eberhard and Gratwick (2011) further note that this calls for explicit policies, governance, and institutional arrangements as well as the need to assign responsibility for planning, procurement, and contracting of the new power generation capacity. In the often-cited example, Kenya has adopted this approach through the unbundling of the generation sub-sector from the transmission sub-sector of the national utility (*ibid*.). Kenya Power and Light Company (KPLC) now takes the responsibility of managing the procurement and contracting process of IPPs which they initially did with the aid of transaction advisors. This allows an independent entity to specifically focus on power procurement and avoids the conflict of interest which arises from national utility acting as the generator as well as the off-taker from IPPs, where the procurement of such supply is likely to be viewed as undermining the utility's revenue (Eberhard and Naude, 2016). An unbundled electricity sector is therefore likely to encourage IPPs and subsequently RE-investments.

2.4.3 Access to financing

Schwerhoff and Sy (2017) contend that the generation and distribution of electricity in Africa entails substantial levels of inefficiencies which, if reduced, could mobilize significant domestic funding for power generation projects. Through state-owned power utilities, governments have the potential to reduce process inefficiencies in order to mobilize funding towards RE projects and also conceptualise viable RE-projects in liaison with funding institutions in order to tap into the readily available funds. The study further argues that extra funding could be attained by addressing inefficiencies in generation, under-pricing of power, and poor budgetary execution.

In substantiating this view, Schwerhoff and Sy (2017) estimate that 80% of the total spending on energy infrastructure in Africa comes from taxes and utility charges and the remaining 20% comes from international donors, namely development finance institutions

(DFIs) and climate-change funds. Such financing facilities attempt to bridge the gap towards accessing project financing in support of the project initiation process. However, Chapters 5 and 6 substantiate on the key argument that such interventions still do not adequately mitigate the risk of security on payments in order to ensure continuity of operations and regular servicing of debts.

The study further highlights that the level of funding provided by climate-change funds is not enough to accommodate large-scale power projects capable of making substantial contributions to national power supplies. However, such funding levels constitute a critical incentive for small scale RE projects. Climate-change seed-funded projects in Africa are therefore more beneficial when directed towards preparing the groundwork for responsive policy frameworks aimed at incentivising private sector RE-investments through mitigating political/institutional risks. The relevance of this view with regard to this study is that it emphasises the need for developing countries to accelerate responsive policy reforms in order to attract private-sector investors in the pursuit of additional funding for large scale RE-projects as further substantiated in Chapters 4 and 5.

As highlighted, Schwerhoff and Sy (2017) point out that RE projects have different risk profiles compared to fossil-fuel based energy projects. In particular, their study notes that RE projects require higher start-up capital even though they have lower operational costs. Although RE and fossil fuel-based energy projects face similar risks, the greater risk in RE projects comes from the higher initial capital commitment thus leading to relatively long pay back periods. This leaves the investor more vulnerable to the risk of failed projects before the costs can be recouped. RE-investment funding is also more difficult to access as most private financiers remain primarily unfamiliar with RE-sector projects relative to the well-understood conventional non-renewable energy projects. This is relevant because it reflects the prevailing direction in Tanzania's power policies as substantiated in Chapter 5.

Eberhard and Gratwick (2011) contend that debt financing in most large-scale RE-projects covers around 70% of the total project costs and therefore access to low-cost financing constitutes a key ingredient towards a successful project experience. Although this is a challenging task in the African context, the most common options entail DFI involvement, credit enhancement measures (such as guarantees), and flexibility in terms and conditions set by the various parties in order to allow refinancing as project certainty/bankability improves. An important ingredient towards the sustainability of RE project implementation and operations is to ensure that returns on investment actually match the country's and project's risk-profiles. It is therefore important that the tariffs are not set at inflated levels

which would be detrimental to the host country's ability to sustain payments into the long-term. An example of such a case is Tanzania with the IPP called Independent Power Tanzania Limited (IPTL) where the set tariffs emerged to be amongst the highest in Africa and thus led to international dispute resolution with the intention of tariff renegotiation (Kapika and Eberhard, 2013).

Given that bond markets in SSA are small and capital markets are in their infancy relative to those in the developed world, domestic investors find it hard to raise the required funds for RE-projects (Schwerhoff and Sy, 2017). On the other hand, foreign markets are difficult to access due to the weak sovereign credit ratings for SSA countries as highlighted in Section 2.3 and substantiated in more detail in Chapter 4.

Although locally dominated financing is ideal compared to the dominance of foreign investment, capital markets in many African countries are not yet capable of timeously raising sufficient financing for large-scale investments. Eberhard and Gratwick (2011) highlight a few existing exceptions in Senegal, Nigeria, and Uganda. One key advantage to locally dominated financing is that the effects of macro-economic shock and currency devaluation are not as consequential as under FDIs and therefore the influence of credit ratings is not as significant and thus the requirement for high rates of returns are significantly diminished.

2.4.4 Summary

The literature appraised in this section highlights political risk as well as access to financing as the key public-sector responses to negative risk perceptions as well as constraints to FDI for RE-project investments. As mentioned in sub-Section 2.3.4, a credit rating is significantly influenced by political risk and in turn, credit rating influences access to financing. Sovereign credit rating is therefore highly influential on the risk perception in private-sector investment and therefore, a crucial factor towards RE-investment.

2.5 Energy infrastructure of South Africa

Eberhard and Kåberger (2016) state that in 2011, South Africa transitioned from its previous focus on Renewable Energy Feed-in Tariffs (REFIT) to a competitive bidding process guided by the Renewable Energy Independent Power Producer Procurement Program (REIPPPP). In the first half of 2011, the Department of Energy (DoE) held various informal consultations with developers, lawyers, and financial institutions. These consultations proved to be "extremely important in terms of allaying market concerns resulting from the earlier REFIT

process and providing informal feedback from the private sector on design, legal, and technological issues" (Eberhard and Kåberger, 2016:191).

In August 2011, following multiple consultations, the DoE announced the launch of the REIPPPP. Through the REIPPPP, South Africa managed to procure 6,422 MW through 112 IPP projects as of June 2017 at a price drop in solar PV by "two-thirds from Bid Window 1 (BW 1) to BW 3, and by 25% from BW 3 to 4" (Eberhard and Naude, 2016:12). The level of RE-investments in South Africa is attributed to the efforts of the REIPPPP as well as the support of investment grade rated government guarantees as substantiated further in Chapter 5. Further data on the energy profile of South Africa are presented in Chapters 5 and 6.

2.6 Energy infrastructure of Tanzania

In contrast to South Africa's innovative experience, Tanzania is only now starting to investigate methods applied by other countries towards accelerating private sector participation in the country's RE-projects. The Power Systems Master Plan of 2016 identifies government guarantees and payment assurance as fundamental factors to mitigate investor-risk (MEM, 2016). However, as substantiated in Chapter 5, the country no longer issues government guarantees. Moner-Girona *et al.* (2016:1) further note that Tanzania uses standardized tariffs for small-scale power producers (SPPs). In order to address the weak grid infrastructure and promote micro-grids in Tanzania, Williams *et al.* (2015) note that Tanzania offers a tariff-premium to micro-grids compared to national-grid connected suppliers. However, a clause exists in the related contracts that if the isolated micro-grid is eventually connected to the national grid, the lower national-grid rates would be adopted. Such conditions pose the risk of uncertainty on future payments especially with regard to such changes taking effect prior to the expected returns being realised.

Kapika and Eberhard (2013) and Cooksey (2017) summarise the series of events in Tanzania with regard to the national utility, Tanzania National Electricity Supply Company (TANESCO), and IPPs which revealed that the country was being charged amongst the highest tariffs in Africa as an outcome of direct negotiations which was later established to be linked to a series of misconducts and corruption amongst private and public-sector officials. The contracts entered with the IPPs led to numerous disputes for tariff renegotiation and international arbitration (some of which are still ongoing) which have ended with TANESCO owing damages to IPPs for breach of contracts on non-payment of capacity charges (see definition of terms - Section 1.9).

These damages have costed the government heavily as TANESCO was ultimately unable to pay the debts and the projects had government guarantees. The country has since been sceptical towards IPPs and private sector participation in the power sector and therefore no longer offers guarantees for power projects as further substantiated in Chapters 5 and 6. Eberhard *et al.* (2016) argues that Tanzania's experience attests to weaknesses in the planning and implementation of power procurement projects and that the country should address these weaknesses instead of attributing the outcomes as drawbacks of private sector participation in the electricity sector. With the already low-levels of RE-investment in the country, weak risk perception of the utility, as well as of the country by virtue of its geographical location within SSA, Tanzania continues to experience critical challenges in attracting RE-investment. In line with the literature discussed in this section, further data on the energy profile of Tanzania are presented in Chapters 5 and 6.

2.7 Risk-profile versus tariff levels

For comparison purposes, Table 2 shows the tariffs proposed for PV-generated supply to the national grid for large power producers (above 10 MW) in South Africa and off-grid small power producers (less than 10MW) in Tanzania.

Table 2 Proposed power tariffs for Solar PV in South Africa and Tanzania in 2017. Data sourced from (Creamer, 2017) and (EWURA email response to questionnaire dated October 2017).

Country (Year)	Local currency price /kWh	USD/kWh
South Africa (2017)	ZAR 0.77	0.06
Tanzania (2017)	(Price given in USD)	0.081

The above shows a USD 0.02/kWh price difference between South Africa and Tanzania. Even though Tanzania experiences a weaker country risk profile and the tariff could be reflective of its negative risk perception, it is clear that such tariff premiums are unlikely to counter the higher risk profile/rating for Tanzania, unless it is complemented with more extensive policy and institutional reforms towards mitigating the high-risk profile.

2.8 Consolidation and overall relevance to the study

As the objective of study is to understand how the countries in the SSA region are responding to private sector negative risk perception in order to promote RE-investments, the literature review first sought to understand how this negative risk perception is being mitigated. Literature from Section 2.2 suggests that the sovereign credit ratings from the big three CRAs are significantly influential on private-sector investor risk perception. The literature also highlight that the big three CRAs have been extensively criticised for their

biased and subjective ratings. These theories inform the study on the influence and subjectivity of the credit rating agencies as well as assist to understand patterns emerging from the data presented and analysed in Chapter 4.

Although literature in Section 2.2 discuss criticisms towards the CRAs, studies reviewed in Section 2.3 highlight how the credit ratings provide information on sub-investment grade ratings which are hard to obtain on the public domain. Private-sector investors depend on such credit ratings for risk information on SSA countries. Section 2.3 further appraises literature which suggest that the countries in the SSA region generally have a low credit rating and thus, the region is constituted as though it is one country and is perceived as generally risky. Furthermore, studies revised in Section 2.3 suggest that due to the negative risk perception, higher rates of return do not attract FDI as proportionally as other regions in the world. This implies that access to financing is constrained and that other risk mitigating measures are required in order to attract FDI. Literature reviewed in Section 2.3 also suggests that uncertainty on policy reforms and continuity in SSA countries constitute additional deterrents to FDI for the region. These points are suggested to be the reasons for lower FDI levels in the SSA region. These insights further inform the study on factors leading to negative risk perception as well as the deterrents to FDI.

Section 2.4 appraises literature on public sector responses which could mitigate the negative risk perception and promote RE-investments. Responsive policies, accountability and addressing regulatory risks are amongst the points raised in order to address political risks as well as low credit rating. The literature appraised also suggests that unbundling the structure of the utility can be beneficial to the power procurement process and attract RE-investment. Furthermore, studies suggest RE-investments require relatively larger start-up capital and that improving the efficiencies within the utility can unlock capital which could be used for RE-investments. Due to the limitations of access to financing, guarantees as well as DFIs are key to attracting RE-investments. However, studies also imply that grant funding mechanisms towards RE-investments in the SSA region seem to mainly assist with the pre-implementation stages and therefore do not offer the required assistance at the implementation and operations stages. These insights are relevant to the data presented and analysed in Chapters 4 to 6.

Sections 2.5, 2.6 and 2.7 appraise literature on the energy sectors of South Africa and Tanzania as an introduction to understanding the levels of RE-investments and tariffs offered in the case study countries. The literature suggests that South Africa, has progressed relatively well with respect to RE-investments through responsive policy for motivation and

the development of a dedicated procurement program. Tanzania has also taken some measures to promote RE-investments, even though not as significant as those taken by South Africa. The literature review also highlight that the power utility in Tanzania has had negative experiences with IPPs which gives room for resistance from the public sector towards IPPs and subsequently, private sector RE-investments. Section 2.7 presents a comparison on the tariffs offered in South Africa and Tanzania which suggests that Tanzania is expected to do more than offer higher tariffs in order to expedite RE-investments in the country. These theories guided the study towards the data presented in Chapters 4, 5 and 6. The following section presents the conceptual framework which attempts to link the insights appraised above which is subsequently followed by the research methods.

2.9 Conceptual framework

Guided by the problem statement (as presented in Section 1.3), working hypothesis (as presented in Section 1.8) and insights from the literature review undertaken in this chapter, the conceptual framework that guided the study has been captured as shown in Figure 1. The empirical problem which provoked the study arises from the scenario of low electrification rates in the SSA region in spite of the region's relatively high levels of RE-potential which is also coupled with relatively low levels of private-sector RE-investments versus the inadequate public-sector funding for related infrastructure. Given such a scenario, the conceptual framework mirrors the working hypothesis that the low-levels of private sector RE-investments in the region is primarily due to private-sector perception of inadequate government responses and attitude relative to perceived risk profiles of the countries within the region, which is then reflected in unresponsive policy terms as well as the weak sovereign ratings of the countries. In their turn, the policy terms and sovereign ratings of a country thus negatively influence the risk perceptions of private sector investors which in effect increases expected levels of returns, especially through premiums on fixed or negotiated RE-tariffs. In the absence of satisfactory premiums, the scenario ultimately contributes to the low-levels of RE-investment in the region. The significance of emerging risk-mitigating interventions beyond premiums on RE-tariffs have also been substantiated in the study as presented in Chapter 6.

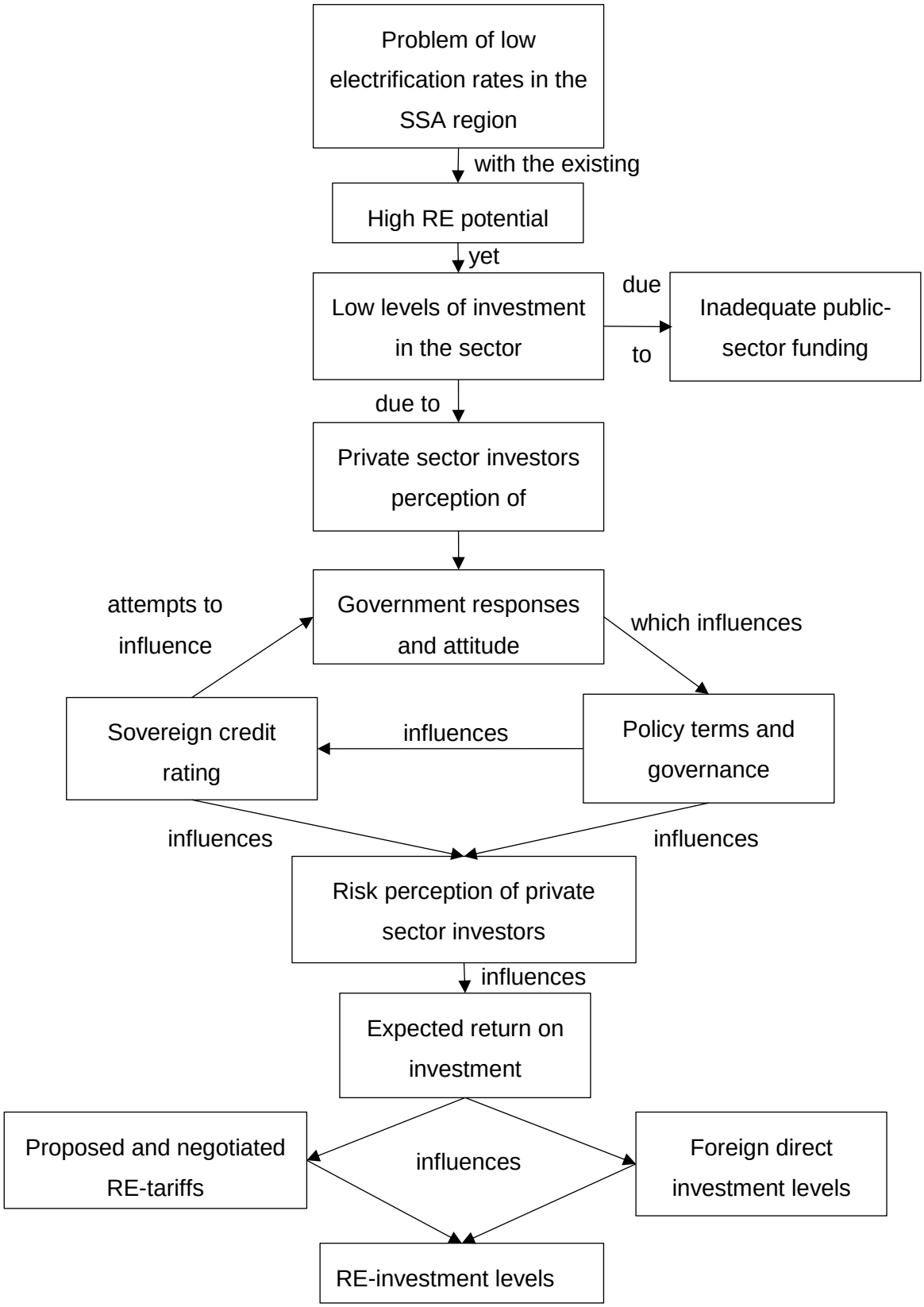

Figure 1 Conceptual framework

Chapter 3: Research Methods

The study was prompted by the apparently weak participation of private-sector RE-investors in the sub-Saharan Africa region despite the noticeably high level of potential RE-resources as well as low electrification rates. As developed countries with a relatively lower level of potential RE-resources are dominating RE-investment levels globally, the study sought to substantiate on what could be causing the low-levels of such investments in the SSA region.

As risk perception is subjective, non-standardised and complex, a qualitative approach was prioritised for the study (Saunders *et al.*, 2009) based on exploratory approach to seek insights and clarify on the understanding of private sector risk perceptions of the SSA region as well as the limitations constraining RE-investments in the region. Given the need for gaining an understanding of the meanings humans attach to the phenomenon of the study qualitative data (*ibid.*), data collection and analyses were guided by an inductive approach which allow the development of responsive theoretical themes.

The study investigated status quo risk perceptions of private-sector investors towards the region and used the findings to compare the level of RE-investments and existing interventions to promote such investments in the two case study countries of South Africa and Tanzania. The comparative case study approach method was applied in order to establish the differences across the two countries which could inform a better understanding of the prioritised phenomenon (Saunders *et al.*, 2009). Although South Africa has a relatively high level of RE-investments compared to Tanzania, the two countries fall within the regional economic community of the Southern African Development Community (SADC). This suggested that they could have more varying approaches which could provide clearer insights if explored in a comparative approach. Whereas the regional economic community members also trade power under the Southern African Power Pool (SAPP), this entity its operations were delimited from the scope of this study. The case study countries were also selected due to easy accessibility of data, with South Africa, as the country where the researcher was carrying out tertiary studies, and Tanzania, as the home-country of the researcher. Ultimately, the study sought to understand what measures the case study countries are taking in order to expedite private-sector RE-investments towards alleviating low levels of electrification rate.

The study was based on a qualitative approach starting with exploratory observations from literature which then led to the conceptualisation of the problem statement and related objective. Thereafter, the approach led to theoretical contextualisation which guided the comparative case study approach across the two case-study countries (South Africa and

Tanzania). Through primary and secondary data on FDI for RE-investments in the region, it emerged that sovereign ratings by CRAs addressed most objectives of the study. Further investigations therefore directed towards the relationship between sovereign credit ratings and the levels of RE-investments in the region with FDI-flows as the core reference.

From the insight that the level of FDI-flows in the region's countries were responsive to the issuance as well as the strength of a credit rating, it was hypothesised that risk perceptions of private-sector investors' in the SSA region were significantly influenced by credit ratings. In order to substantiate on the measures taken to mitigate the FDI constraints for RE-investment as well as the reasoning behind the negative risk perceptions, the relevant investment policies of the case study countries were analysed against the expressed FDI constraints. This gave further substantiation on the FDI constraints as well as an understanding of the negative risk perceptions and the lower credit ratings in the region, which is reflected in the overall lower level of investments and more specifically, RE-investments. By substantiating on the impact of policy responses towards the constraints to FDI flows in the case study countries, the study was able to achieve findings on the attitude of the case study countries towards attracting private-sector investment.

This interpretation was then applied to analyse relevant RE-investment promotion measures and deduce whether they are likely to be effective in mitigating the negative risk perception towards RE-investments in a manner that would incentivise an increase in the level of such investments. Through the comparative approach, findings on the factors which led to the higher levels of RE-investment in South Africa relative to the low levels in Tanzania were derived and substantiated. This revealed what would be required in order to mitigate negative risk perception as well as increase the levels of RE-investments in the SSA region countries. In addition, the exploration into the methods of operation of the credit rating agencies also led to an understanding of why the countries in the region have been reluctant to follow the conventionally recommended risk mitigation measures. Through their private sector country-risk perceptions profiling/rating, the credit rating agencies can severely constrain a country's political and economic choices towards a bias in favour of liberalism and market/private-sector driven development policies with marginal role for the state.

3.1 Data Collection

Primary data were collected through semi-structured, open-ended interviews with relevant participants. Participants representing private sector RE-project developers in the case study countries were interviewed with the aim of soliciting responses on factors which influence investors' country-risk perceptions as well as measures which can be taken to mitigate such

risks, particularly in the RE sector. Whereas the majority of the participants were interviewed face-to-face in the respective cities of Dar es Salaam and Johannesburg, a few cases required telephonic interviews. Relevant primary data extracted from the interviews are presented in the initial sections of Chapters 4, 5 and 6. The interview guide questions are presented in Appendix A.

Government sector participants were only interviewed in Tanzania based on face-face interviews. However, they were key to providing public sector perspectives towards policy decisions as well as private sector demands in a country where a government's philosophies and policy-directions are not easily accessible through media public platforms. The respondents were specifically from the Ministry of Energy as well as the regulatory authority (Energy Water and Utilities Regulatory Authority - EWURA). In Tanzania, government participants were also drawn from a marketing agency of investment opportunities (the Tanzania Investment Centre, which is a parastatal agency). In South Africa, due to well-documented and systematically archived publications (especially on policies and RE-investments) as well as relatively more liberal media, government policies and actions were more readily accessible through secondary data extracted from reports and websites of the relevant departments and agencies.

Secondary data were identified and captured from relevant reports, academic papers, and journal articles including literature on credit risk rating services, national private-sector investment policies, energy sector policies and project financier and owners' profiles. These sources helped in the analyses of directives as well as the enforcement of policies through documented interpretations and experiences/outcomes. Print-media articles and archival records were also regularly referred to due to the highly political and dynamic nature of the issues covered in the study, which translates to the high visibility in the media reports. Table 3 presents an overview of the data collected and analysed in relation to respective sub-questions of the study.

Table 3 Summary of the data required per research sub-question

Research question	Data need Data sources	Data analysis and processes
Sub-question 1: What is the status quo risk perception and profiles of the region and the respective countries?	The main source is secondary data which comprises of: -FDI constraints in developing countries. -The year in which various SSA countries were first issued a credit rating from one of the big three CRAs. -FDI levels in various SSA countries and the region over a specific period. -The year in which various SSA countries issued a sovereign bond. -The directives of the national investment policies in the case study countries. Sources of data: MIGA investment and political risk reports, electronic journals, CRA agency reports, World Bank development indicators, national investment policies (Promotion and Protection of Investment Act 22 of 2015 for South Africa and the Tanzania Investment Act of 1997). Primary data comprised of:	Categorised data on the constraints to FDI to developing countries were compared to factors which determine a credit rating in order to assess whether they are interlinked and whether credit ratings influence risk perceptions of private-sector investors. Data on FDI levels in various SSA countries before and after the issuance of a credit rating were analysed in order to assess the effect of the credit rating on FDI-levels. Data on the year in which sovereign bonds were issued by various SSA countries versus the year in which they were first issued a credit rating were analysed in order to determine whether credit ratings are viewed by the countries

	-Private sector opinions towards risks on investment and RE-investments in the region and case study countries. Sources of data: Open-ended semi-structured interviews which were guided by the interview guide questions (see Appendix A).	as a pre-requisite to issuing a bond as well as a measure of risk mitigation. Data on the constraints to FDI and participant concerns towards investment were analysed against the respective case study countries' national investment policies/directives in order to determine whether the investment policies address private-sector concerns towards investment. The data were mainly presented on tables and graphs.
Sub-question 2: What are the existing levels of private sector RE-investments and related risk perception mitigation interventions?	The main source is secondary data which comprises of: -The MW of RE generation in the case study countries and the total national generation capacity. -The directives of the national energy policies in the case study countries. - Credit ratings/worthiness of the utility (off-taker). -The status quo of RE-development in the case study countries.	Data on the MWs of RE generation capacity against the total national generation capacity in the case study countries were analysed in order to determine the levels of RE-investments in the country. Data on the directives of the respective case study countries' national energy policies were analysed in order to

	Sources of data: Credit rating agency reports, Eskom and REIPPPP reports for South Africa. TANESCO and EWURA reports for Tanzania. National energy policies (the Integrated Resource Plan of 2010 for South Africa and the Power Systems Master Plan of 2016 for Tanzania). Printed media articles and electronic journals. Primary data comprised of: -The status quo of the credit worthiness of the utility and RE-development in the case study countries. -Public sector challenges towards promoting RE-investments. Sources of data: Open-ended semi-structured interviews which were guided by the interview guide questions (see Appendix A).	determine their commitment towards RE-investments. Data from printed media articles, energy sector reports, electronic journal articles, CRA reports and participant opinions were analysed in order to deduce the credit worthiness of the utility and the status quo of private-sector RE-investments in the case study countries. The data were mainly presented on tables and graphs.
Sub-question 3: How do other interventions such as government guarantees feature in risk mitigation towards RE project	The main source is secondary data which comprises of: -Government guarantee expectations in the respective case study countries. -Alternative risk mitigation measures towards RE-developments in the case study countries.	Data on the directives on the government guarantee policies of the respective case study countries were analysed in order to determine whether the policies offer insights on guarantee as risk mitigation

developments in the respective countries?	-Existing risk mitigative measures towards RE-development in the case study countries. Sources of data: Government guarantee policies (the Public Finance Management Act of 1999 for South Africa and the Government Loans, Guarantees and Grants Act, 2003 for Tanzania). Electronic journal articles and multilateral institutions' reports. Primary data comprised of: -The status quo of government guarantees with respect to RE-projects in the case study countries. -Existing risk mitigative measures towards RE-development in the case study countries. Sources of data: Open-ended semi-structured interviews which were guided by the interview guide questions (see Appendix A).	expectations of potential investors. Data on the accessibility of guarantees and other risk mitigative measures for RE-investments in the case study countries were analysed in order to determine alternative interventions towards promoting RE-project development.
Sub-question 4: To what extent are the tariffs and tariff premiums effective as mechanisms	The main source is secondary data which comprises of: -Tariff and tariff premium levels in the case study countries.	Data on the levels of RE-investments with respect to the tariff levels in the case study countries were analysed in order to determine the level of influence of tariff-

towards risk mitigation in the two case study countries?	Sources of data: REIPPPP and EWURA reports and general notices. Primary data comprised of: -The expected rate of return on investments in the sub-regions of the SSA and the case study countries. - The private sector's perception on the relevance of tariffs-levels. Sources of data: Open-ended semi-structured interviews which were guided by the interview guide questions (see Appendix A).	levels on the level of RE-investments. Data on the expected rate of return in the region were analysed in order to infer whether the rates of return influence the tariff levels in the respective case study countries.
Overall research question: The sub-findings from the 4 sub questions were consolidated in order to derive the overall findings of the study as presented in Chapter 7.		

3.2 Ethical Concerns

It is important to consider ethical concerns in a research study in order to improve on the integrity of the research process and output. In conducting the research for the study, I adhered to the research ethics guidelines of the University of Witwatersrand (See Appendix B for Ethics clearance certificate). Participation in the research was voluntary and all the necessary information regarding the research procedure was provided to the participants in order to solicit consent prior to participation. The interview questions were carefully constructed to engage the participant in a conversation on the subject matter. However, the process was sensitively executed to avoid prying into irrelevant information from the participant. I gained each participant's personal perspectives on the subject matter through open-ended conversations which were guided by the interview-guide questions as shown in Appendix A.

As a researcher, I remained mindful of only capturing the opinions of respondents and ensuring they could not be easily traced back to them or their respective institutions. With some institutions, I was required to sign consent forms in order to confirm that I would not name their institution in my research report. Due to the political climate in Tanzania (currently under strict monitoring of government-related information being publicised), some participants were not willing to have interviews recorded. Therefore, as a researcher, I had to ensure that the information being disclosed by participants was not confidential and also not significantly sensitive. Participants from government entities, required formal letters to initiate the request. In this study, I have taken responsibility to "protect the privacy of the participants and convey this protection to all individuals involved in the study" Creswell (2009:91). I also ensured to mitigate a biased approach in interviewing as well as in presenting the findings, and thus aiming to ensure such findings were not "suppressed, falsified or invented to meet my research or audience's needs" (Creswell, 200:92).

3.3 Limitations

This section presents a summary of the key limitations of the study. I had to be mindful of what information I documented in the report given the volatile political climate in one of the case-study countries. Arising from participant responses and media coverage, it seems that the respective case study country is currently under a regime of authoritarian rule which did not allow for a conducive climate for freedom of speech. Respondents were therefore circumspect in the way they responded during the interview.

Access to participants was a critical limitation due the participants' busy schedules and their lingering concerns on the intent of the research. These limitations were overcome by explaining the research purpose prior to the interview and requesting appointments which accommodated participants' schedules. Even with these measures taken, some participants were still not available to participate and had to assign substitute participants for the interview, and in the extreme case, others declined to participate. This limited the data collected as the senior officials had more experience on the issues of interest. In order to overcome this limitation, I solicited for a referral to equally knowledgeable officials as substitute participants. Furthermore, some government institutions in Tanzania preferred not to provide interview responses but instead opted for responding to the interview questions through formal/standardised letter requests followed by standardised letter responses. This limited the opportunity for the substantiation of responses and also entailed delays in responses. However, the required data were eventually provided.

Due to the nature of the open-ended interview questions, the researcher asked numerous supplementary questions in order to gain as much insight as possible around the core issues of the study. In cases where respondents were unavailable to participate, data requirements from primary sources were complemented by data from secondary sources. More participants were interviewed in Tanzania than in South Africa due to their accessibility and availability and thus the primary data for Tanzania are more prevalent than those of the South Africa case study. However, whereas primary data was limited for South Africa, secondary data were more readily available. The researcher also engaged in a friendly but professional relationship with participants in order to mitigate their reluctance to subsequent follow-up interview questions where or when clarification became necessary.

Given the subjective aspects in risk perception and credit rating practices, an open-ended interview approach was used (as opposed to a questionnaire-based survey) in order to acquire an enriched perspective on risk issues, concerns and perceptions. Software for analysing data was not used due to the time constraints of familiarisation with the software as well as to allow the researcher to become more acquainted with the data collected and meticulously analyse the data. However, due to the extensive nature of the responses received, thorough coding of the data was done in order to ensure alignment with the delineated scope/needs of the study. Huchzermeyer and Boshoff (2017) argue that comparative study approaches require a lot more time for data collection and analysis in order to ensure that the rationale for the comparison is adhered to.

It was also essential to carefully delineate the scope of the research while also factoring financial resources and time requirements for travel and interviews, as well as adhering to deadlines for the submission of the study. Equally, travel, accommodation, and subsistence costs required for the fieldwork/data-collection stage had to be carefully budgeted and strictly monitored in order to complete the research within the given time and with the available (though limited) budget.

Chapter 4: Risk perception and profiles of the region and respective countries

4.1 Introduction

This chapter sets the scene towards an understanding of the factors which influence the level of private-sector investment in the region and more specifically in terms of RE projects. The constraints on FDI are substantiated in order to assess how private-sector investors perceive risk in relation to investment in the region. This is based on the expectation that the higher the level of overall FDI in a region/country, the lower the respective perceived risk. An understanding of what influences the levels of FDI would serve as an indication of what influences private-sector investors' risk perception and vice-versa. An understanding of what private-sector investors identify as critical risks also allows for an opportunity to evaluate responses towards addressing these issues, which thus leads to the substantiation in Chapters 5 and 6.

This chapter therefore responds to sub-question 1 which focuses on the status quo risk perception and profiles of the region and the respective countries. Through the analysis of related primary and secondary data, the chapter substantiates on the existing risk perceptions of the region and the two case study countries. Table 4 shows the list of the key respondents referred to in Chapters 4 to 6. The analysis and evaluation of risk perception is structured into four key sections as follows:

- The constraints to overall FDI in developing countries (see Section 4.2)
- The impact of sovereign credit ratings on FDI and sovereign bond issues (see Section 4.3 and 4.4)
- Political risks of developing countries on RE-investments (see Section 4.5)
- National investment policies in the case study countries (see Section 4.6)

Table 4 List of key interview respondents

Key interview respondents for primary data					
South Africa (SA)			**Tanzania (TZ)**		
Description	**Nos**	**Code**	**Description**	**Nos**	**Code**
RE project developer	1	A1	RE project developer	1	B1
RE project developer	1	A2	RE project developer	1	B2
National Energy Regulator of South Africa (NERSA)	0	A3	Energy and Water Regulatory Authority (EWURA)	1	B3
Department of Energy (DoE)	0	A4	Ministry of Energy (MoE)	1	B4

Department of Trade and Industry (dti)	0	A5	Tanzania Investment Centre (TIC)	1	B5

Findings on the status quo private sector risk perceptions of the region and the case study countries were derived from the data collected through interviewing participants. Findings on the public sector's awareness of the country's risk perception as well as their responses to their existing risk perceptions (especially in the case study country of Tanzania) were also derived from data collected through interviewing participants. In order to offer context for the primary data presented in Chapter 4, a summary of key interview responses as well the data abstracted are presented in Table 5 below.

Table 5 Presentation of Chapter 4 primary data

Chapter 4 Primary data					
Subject	**Region**	**Question**	**Respondent**	**Responses**	**Data abstracted**
Private sector risk perception	TZ	Is there an institute which is involved in assessing the country risk perception and responding to it?	Risk insurance agency	The country has not yet attained a credit rating, but it has been following the process for the past 2 years. Fitch Ratings as well as Moody's were approached by the government. The government is still analysing who will do the assessment, the reason for this is that the country is trying to launch its first sovereign bond and cannot do this without a rating.	The government of Tanzania is aware of the effects of credit ratings on risk perception and is showing effort towards responding. However, delays suggest a change of decision towards countering risk perception in this manner or that it is not a priority.
Private sector risk perception	SSA	When looking into investing in a country, do you consider the sovereign credit risk ratings (i.e. Fitch, Moody's. S&P)?	A1	Credit rating is a factor in our approval process. We enter into PPAs with national utilities and typically seek a sovereign underwrite. If the country has a poor rating, then this increases the risk of default by the government. We then seek insurance instruments to mitigate the sovereign risk, such as PRI and PRG.	CRA ratings influence the approval process for RE-investments. RE-developers seek sovereign guarantees. Weak ratings lead developers to seek instruments that mitigate the risk such as Political Risk Insurance (PRI) or Partial Risk Guarantee (PRG).

Private sector risk perception	SA	Would you consider South Africa as riskier with the recent downgrades?	A1	Yes, it is riskier. We haven't evaluated projects since the downgrades, but I think if the REIPPPP market reopens then the risk perception will show itself through equity investors requiring a higher return to compensate for the higher risk.	CRA ratings affect the cost of borrowing from lenders/investors. Private-sector investors view South Africa as riskier due to the rating downgrades from investment grade.
Public sector responses	TZ	What challenges has the public sector experienced with tariffs?	B4	We don't have a facility outside where the cost of RE projects is taken by an environmental basket or some sort of mechanism, so some RE-developers came with tariffs that were much higher than what TANESCO sells to customers and hence could not afford. Due to the lack of a facility to bridge the tariff gap, projects could not be implemented.	Negotiations with IPPs were delayed because the tariffs presented by IPPs were beyond TANESCO's affordability. There were no facilities to bridge the financial gap and thus, the projects were abandoned.
Public sector responses	TZ	Is the government offering any incentives for RE-development?	B1	There was a clause that said the government will provide all the consents timeously and that failure to do so would allow the developer to trigger force majeure. That protection is no longer there. The abrupt changes reflect a regime's influence on institutions. This is making it harder to raise financing.	Adverse regulatory change is perceived as a risk due to the perceived weakness in institutions and the varying attitudes of the different regimes towards private-sector investors.

Public sector responses	TZ	Do you think Tanzania views itself as risky?	B2	No. There is a gap between the perception of risk and the materiality of risk. The government needs to do more, they need to put the good things they are doing to offset the bad things that are out there. They need to put the decisions of their actions into context.	The country does not seem to perceive itself as risky.

4.2 FDI constraints

Based on the Multilateral Investment Guarantee Agency (MIGA) World Investment and Political Risk Report (WIPR) 2013, the most important constraints to FDI in developing countries (over a term of 3 years and above) along with the responses from private-sector respondents were categorised as shown in Table 6. The constraints are presented in Table 6 in order of importance according to the MIGA-report respondents. The table also presents the constraints to investment as noted by the private sector RE-project developer respondents interviewed in this study.

Table 6 Constraints of FDI in developing economies (Source: MIGA, 2013)

	Priority constraints of FDI in developing economies according to MIGA	**Respondent A1 (SA)**	**Respondent A2 (SA)**	**Respondent B1 (TZ)**	**Respondent B2 (TZ)**
1	Macroeconomic stability	X	X		X
2	Political risk	X	X	X	X
3	Access to qualified staff				
4	Access to financing	X		X	
5	Corruption	X	X		X

According to MIGA (2013), these five constraints are perceived as the most critical risk factors towards investments in developing countries. Even though the report is not specific to the SSA region, the region fully consists of developing countries, and the constraints are therefore relevant. The report highlights that the two most important perceived risks are macroeconomic stability and political risk, which are addressed in this Chapter. The constraints of corruption and access to qualified staff are excluded from the scope of this study, while access to financing is addressed in Chapters 5 and 6. According to the RE project developer respondents of this study and in reference to the MIGA report, the top most expressed constraints towards investing in the region were political risk, followed by corruption and macroeconomic stability and lastly access to financing.

As mentioned in Section 2.3.4, the critical factors which influence credit ratings are macroeconomic variables and political risk. Through analysis based on news and country reports (Luitel *et. al.,* 2016), CRA ratings are also influenced by corruption in the public sector. On the other hand, access to financing is influenced by credit ratings. The 8th most important constraint to FDIs in the MIGA WIPR of 2010 was the 'lack of information on a country's business environment'. Cantor and Parker (1996) highlight that credit ratings provide information on non-investment grade countries which would otherwise not be

publicly available. It is therefore important to note that credit rating agencies are directly linked to 4 out of 5 of the top MIGA (2013) constraints to FDI, which suggests that investors' country risk perceptions get influenced by CRAs. With the big three CRA's accounting for more than 90% of the global credit rating market, and the analysis presented, it can be argued that the big three CRAs influence risk perceptions of private-sector investors. The sovereign rating and profiling of countries by the big three CRAs are therefore used by investors as an indicative guide on perceived investment risk of the respective country.

According to MIGA (2013), the second most important constraint to FDI in developing countries is political risk. For the first time since the start of the MIGA WIPR in 2009, macroeconomic stability overtook political risk as the most important constraint to FDI in developing countries in the 2013 report. According to both primary and secondary data available for this study, political risk persisted as the most important constraint to FDI (in the case of secondary data, up until 2013 - the latest available version of the MIGA WIPRs). MIGA (2013) further states that the macroeconomic-stability concern was in line with the World Bank's projected decrease of FDI for the next few years. In order to substantiate on the findings of CRA ratings towards addressing the constraints to FDI, an analysis of the possible influence of the big three CRA ratings on FDI in the SSA region and its various countries was done.

4.3 Credit ratings and FDI in SSA

As mentioned in Section 4.2, CRAs' sovereign credit ratings are influenced by, and in turn, influence 4 out of 5 of the MIGA (2013) top constraints to FDI. It is therefore possible that the sovereign ratings by the big three CRAs would influence the level of FDI in the respective country. According to the data presented and analysed in this report, only 24 out of the 48 SSA countries (World Bank Group, 2018), have a rating by the big three CRAs. In order to analyse the influence of credit ratings on SSA countries, data were collected on the year the various countries were first issued a credit rating from one of the big three CRAs in the time frame of 2000 to 2016. This was analysed against their respective FDI trends before and after the issuance in the same time frame. The data only applies to countries with a credit rating from one of the big three CRAs.

As presented on the graphs (Figures 2, 3 and 4) below, SSA countries generally reflect a positive trend of increasing levels of FDI a few years after being issued a credit rating. Although there are many other factors which can influence FDI, the data seems to imply that a credit rating could be bridging the information divides between investors/lenders and host countries in the SSA countries and thus facilitating for increased inflows of FDI. According to

the data, it seems beneficial for countries to secure a credit rating as an intervention towards improved levels of FDI. It is important to note that most of the countries represented in the data below were first issued sub-investment grade ratings. The largest data point on each data series indicates the year in which the country was issued a credit rating from one of the big three CRAs. The graphs have been separated due to the vast range of FDI magnitudes. South Africa is excluded from the data-set as it was issued a credit rating before 2000.

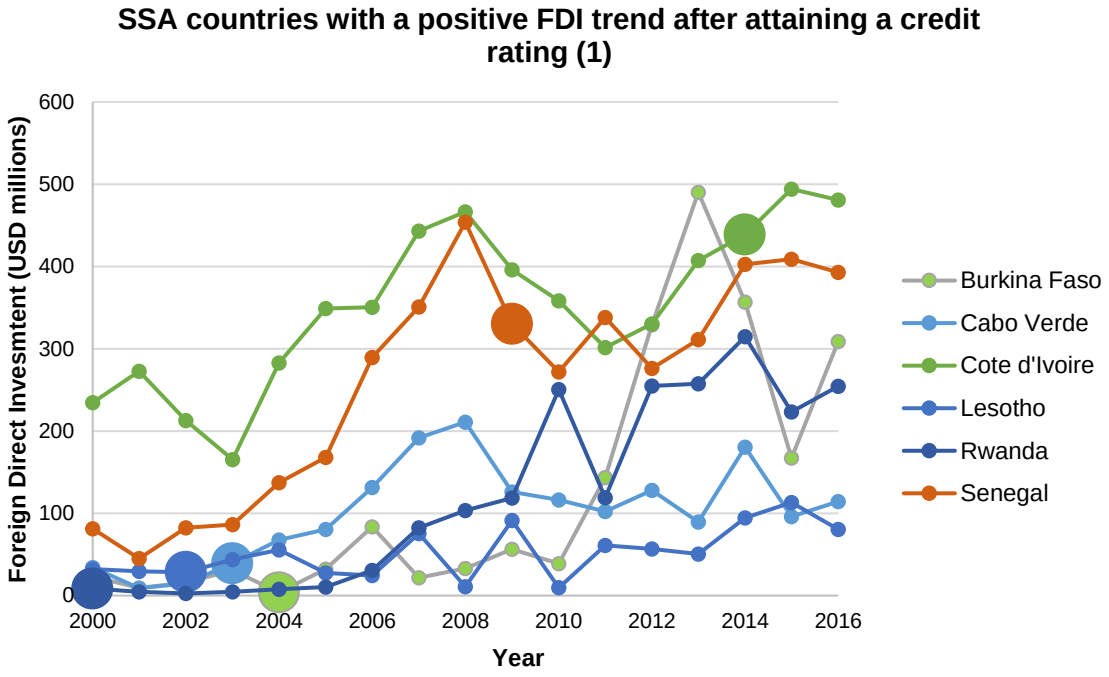

Figure 2 SSA countries with a positive FDI trend after attaining a credit rating (1), (Source: World Bank Group, 2018)

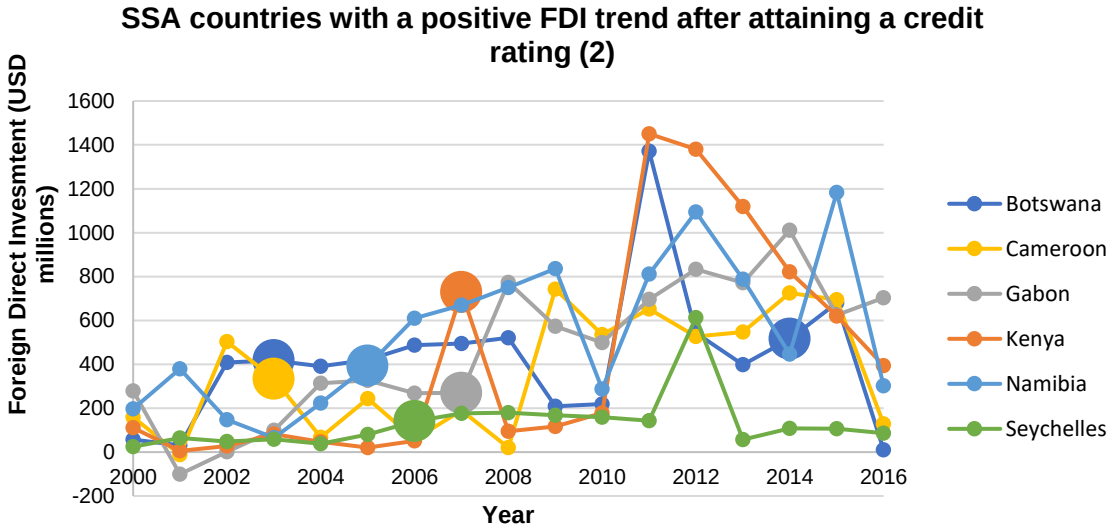

Figure 3 SSA countries with a positive FDI trend after attaining a credit rating (2), (Source: World Bank Group, 2018)

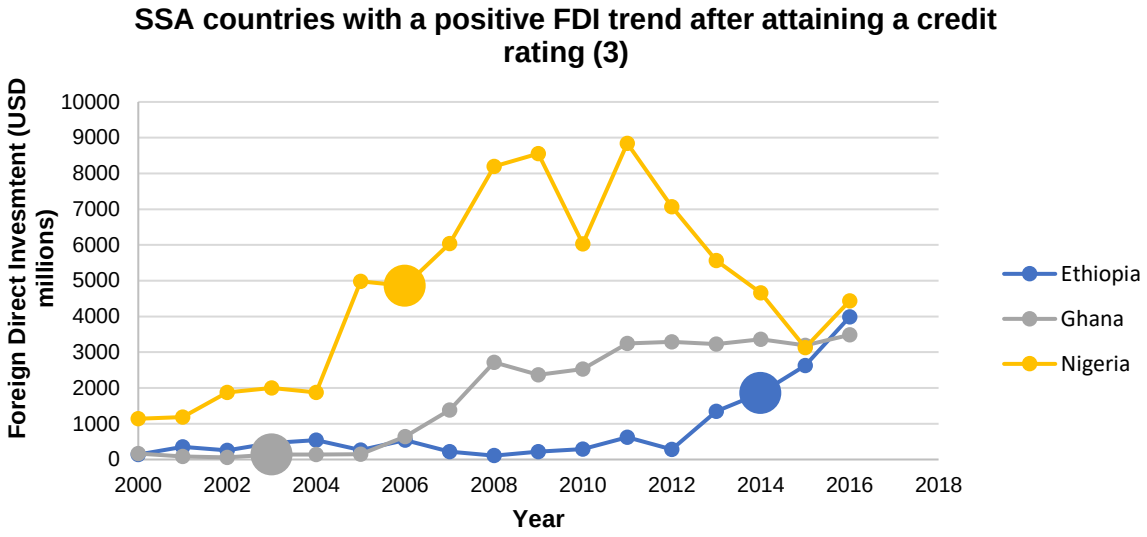

Figure 4 SSA countries with a positive FDI trend after attaining a credit rating (3), (Source: World Bank Group, 2018)

In contrast, Figure 5 shows the rated SSA countries which experienced a negative or stagnant FDI trend a few years after being issued a credit rating. One could argue that the countries were doing better with respect to FDI before being issued a credit rating. This could mean that the ratings exposed information which dampened investors' interest in the countries investment opportunities. However, it could also be argued that the ratings were biased, and the countries were rated to be riskier than warranted, or that the decrease in FDIs were due to other determinants of FDI or by external factors unrelated to the country's economic or political conditions.

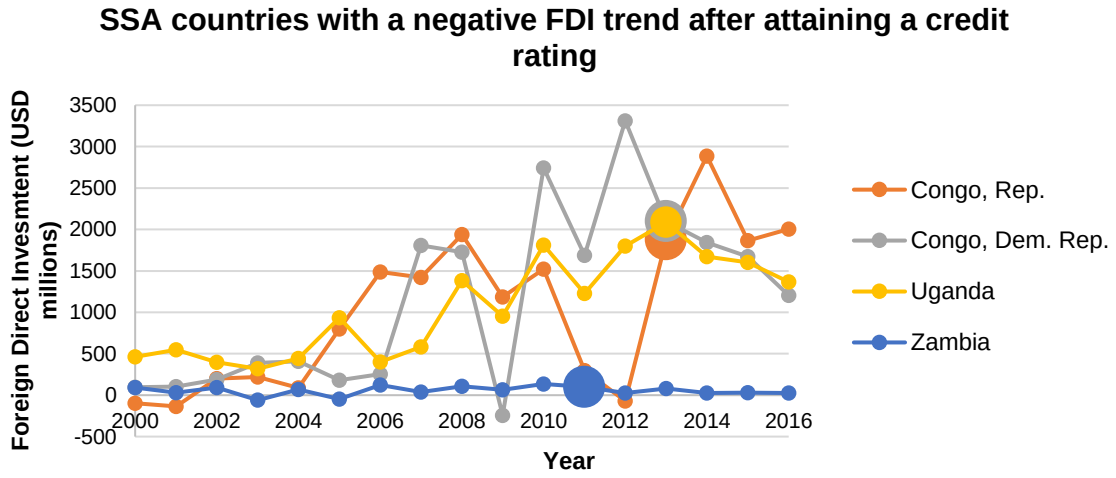

Figure 5 SSA countries with a negative FDI trend after attaining a credit rating, (Source: World Bank Group, 2018)

Figure 6 shows the general trend of FDI in SSA from 2000 to 2016 in comparison with other low and middle-income regions in accordance with World Bank statistics (World Bank Group, 2018). Based on the data, FDI in SSA generally increased even though it experienced a slight decline from 2014. The SSA region however had the lowest overall increase in FDI as well as the lowest level of FDI in 2016, which reflects how the region is perceived in terms of investment and thus implies that the region continues to be perceived as risky by private-sector investors.

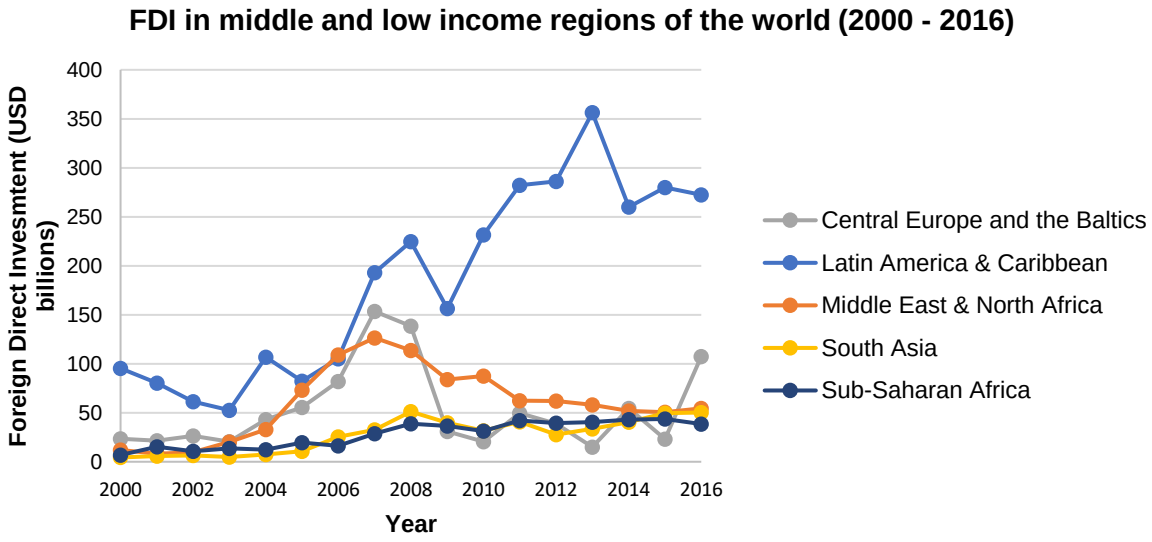

Figure 6 FDI in middle and low-income regions of the world (Source: World Bank Group, 2018)

4.4 Credit ratings and sovereign bonds in SSA

In order to further conceptualise the perceived risks of investment in the SSA region and the effectiveness of credit ratings, data were gathered on the international sovereign bonds issued by various SSA countries from 2006 to 2014 and this was compared with S&P ratings at the time. The data are presented in Table 7.

Table 7 SSA countries international sovereign bond issuance versus credit rating and interest (Sources: Olabisi and Stein, 2015. Moody's, 2013. Presbitero et al., 2016.)

SSA international Sovereign bond issuance from 2006 -2014						
Issuer	**Year of bond issuance**	**Coupon**	**Tenor**	**Amount (USD million)**	**S&P rating at issue**	**Year first issued a rating from big three**
Seychelles	2006	9.125	5	200	B	2006
Ghana	2007	8.5	10	750	B+	2003
Gabon	2007	8.2	10	1,000	BB-	2007
Congo, Republic of the	2007	3.5	22	480	Not rated	Not rated

Senegal	2009	8.75	5	200	B+	2009
Seychelles	2010	5	16	168	Not rated	Not rated
Côte d'Ivoire	2010	5.75	23	2,330	Not rated	Not rated
Nigeria	2011	6.75	10	500	B+	2006
Senegal	2011	8.75	10	500	B+	2009
Namibia	2011	5.5	10	500	Baa3 (Moody's)	2005
Zambia	2012	5.375	10	750	B+	2011
Tanzania	2013	6.332	7	600	Not rated	Not rated
Rwanda	2013	6.625	10	400	B	2000
Nigeria	2013	5.125	5	500	BB	2006
Nigeria	2013	6.375	10	500	BB	2006
Ghana	2013	7.875	10	750	B	2003
Zambia	2014	8.5	10	1,000	B+	2011
Kenya	2014	6.875	10	1,500	B+	2007
Kenya	2014	5.875	5	500	B+	2007
Côte d'Ivoire	2014	5.375	10	750	B1 (Moody's)	2014
Senegal	2014	6.25	10	500	B+	2009
Ghana	2014	8.125	10	1,000	B	2003
Ethiopia	2014	6.25	10	1,000	B	2014

The data show that most of the SSA countries issued an international sovereign bond only after being issued a credit rating. The data also show that the Seychelles, Gabon, Ethiopia and Cote D'Ivoire managed to issue a sovereign bond and raise debt in the same year that they were first issued a credit rating. Zambia issued a sovereign bond in 2011, which was a year after being issued its first credit rating. This implies that most of the SSA countries consider the ratings beneficial and as an important prerequisite to issuing an international sovereign bond.

However, countries like the Republic of the Congo, Cote D'Ivoire, and Tanzania initially managed to issue sovereign bonds and raise debt without a rating. This could possibly indicate that these countries did not perceive a rating as a requirement for issuing an international sovereign bond and would thus imply on their own impression of their perceived risk. It is important to note, however, that the Republic of the Congo and Cote D'Ivoire were subsequently issued a credit rating in 2013 and 2014 respectively. This could imply that after the issuance of their first sovereign bond, both countries acknowledged the need for a rating.

It should be noted that for all the sovereign bonds issued by rated countries (except Namibia), they were issued at sub-investment rating and that their coupon rates (yearly interest rate) on bonds at the time of issuance were above 5%. Regardless of Namibia's investment grade rating in 2011, it also only managed to attain an interest of just over 5%.

Zambia managed to attain a lower interest with the sub-investment grade rating for the same bond amount and tenor, a year later. It is also noteworthy that countries without credit ratings received closely similar interest rates to those of rated countries. This brings into question whether credit ratings necessarily change the perceived risk perception of the region or they merely reinforce the already existing risk perception. In addition, this raises a further question of whether it is beneficial to be issued a credit rating with respect to the interest rates attained on the international sovereign bond market.

Oetzel (2001) highlights that CRAs ratings are expensive to attain as well as maintain. As a result, if a country is not compliant to the criteria and thus ends up with a sub-investment grade rating, the cost of borrowing remains high (not significantly changed) based on the interest attained on sovereign bonds. If the cost of borrowing still remains high and in some cases, the FDI in the country does not improve, then the cost of securing and maintaining a credit rating does not seem to be worth it. Due to the poor credit ratings of the countries in the SSA region and their high levels of perceived risk, interests on bonds are high compared to other countries in the world which enjoy a yield below 5%. This shows that the SSA region continues to be perceived as risky for private-sector investment and that the credit ratings could only end up reinforcing this perception.

However, it is also important to note that nearly half of the sovereign bonds issued by SSA countries between 2010 to 2016 are close to defaulting on payments due to requests for rescheduling of payments (Hambayi, 2017). Whereas this could be viewed as confirming the reasons for the negative risk perception, the potential defaults could possibly be attributed to the relatively higher interest rates. For the purpose of comparison, interest rates on sovereign bonds for other parts of the world are shown in Figure 7 which displays countries with interest rates below 5%. Based on data reflecting higher interest rates on sovereign bonds in Africa, Olabisi and Stein (2015) argue that it costs African countries more to borrow compared to countries in other regions of the world. This further substantiates on the negative risk perception of the region as well as the influence of the credit ratings on risk perception.

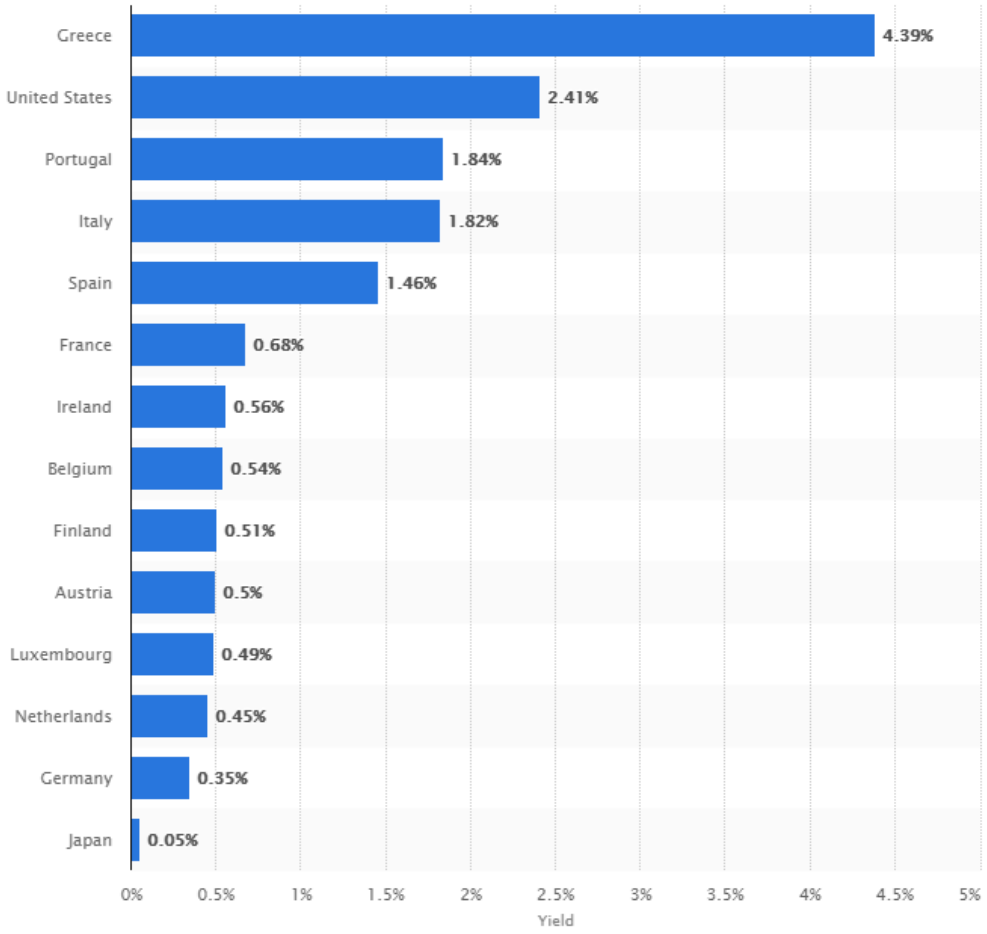

Figure 7 Yield on ten-year government bonds of selected countries as of December 2017 (Source: Statista, 2017)

4.4.1 South Africa

In order to be issued a sovereign credit rating from the big three CRAs, the government seeking a risk rating approaches the CRA. Fees are negotiated for the first issuance of a credit rating as well as for the surveillance and maintenance of the rating. In the case of the Government of South Africa, the South African Treasury pays the CRA fees (National Assembly, 2017). South Africa has a credit rating with each of the big three CRAs and the first one was issued by Fitch in September 1994, followed by Moody's and S&P in October 1994. Fitch and S&P initially issued a sub-investment grade rating to South Africa whilst Moody's gave the country an investment grade rating. The fact that South Africa has maintained credit ratings with all three CRAs from 1994 implies that the country acknowledges the influence and importance of country risk perception as well as the influence of the credit ratings on country risk perception.

As a reflection of the changing socio-economic and political conditions in South Africa, only Moody's still rates South Africa at investment grade even though this rating is at the lowest level of investment grade and this was under review during the research period. S&P and

Fitch both downgraded South Africa to sub-investment grade in November 2017 (Donnelley, 2017). According to National Treasury's Budget Review of 2017, CRAs are concerned by South Africa's "low economic growth rates, political risk, policy uncertainty and the weak balance sheets of the state-owned companies" (National Treasury, 2017:81). This shows the extent to which CRA ratings can be influenced by subjective opinions on government decisions with regard to policy. This also implies the influence that the CRAs can have on the cost of borrowing based on changes in the political dynamics in a country.

According to a written reply from the Minister of Finance to parliament in 2017, the Government of South Africa paid four credit rating agencies an estimated amount of ZAR 81.45 million (approximately USD 6.97 million) in fees from 2007 to 2017 (National Assembly, 2017). The four rating agencies include Japanese' Ratings and Investment Information Inc (R&I) and the big three CRAs. These fees include the services of annual sovereign rating surveillance. The breakdown of the fees is shown in the Table 8.

Table 8 Fees paid for CRAs services from 2008 to 26th May 2017 (Source: National Assembly, 2017)

Rating Agency	Total fees from 2007 to 2017 (ZAR)	Average/year (ZAR)
S&P	30,621,600	3,062,160
Moody's	28,657,077	2,865,708
Fitch	20,333,793	2,033,379
R&I	1,839,404	183,940
Total	**81,451,874**	

South Africa's FDI trend since being issued a credit rating in 1994 is shown in Figure 8. Based on the data presented, the FDI for South Africa responds to the credit ratings. The FDI increases with credit rating upgrades and decreases with credit rating downgrades. It should be noted that the FDI does not necessarily stay constant after an upgrade. Instead the FDI rather spikes in response to a credit rating upgrade and then declines. Although there are other factors which affect FDI, this pattern seems to reflect a correspondence between South Africa's FDI and credit ratings and thus substantiates on the influence of the credit ratings on FDI. The data implies that the risk perception of South Africa by foreign investors is significantly influenced by credit ratings of the big three CRAs and consequently, that investor country risk perceptions are influenced by the CRA ratings.

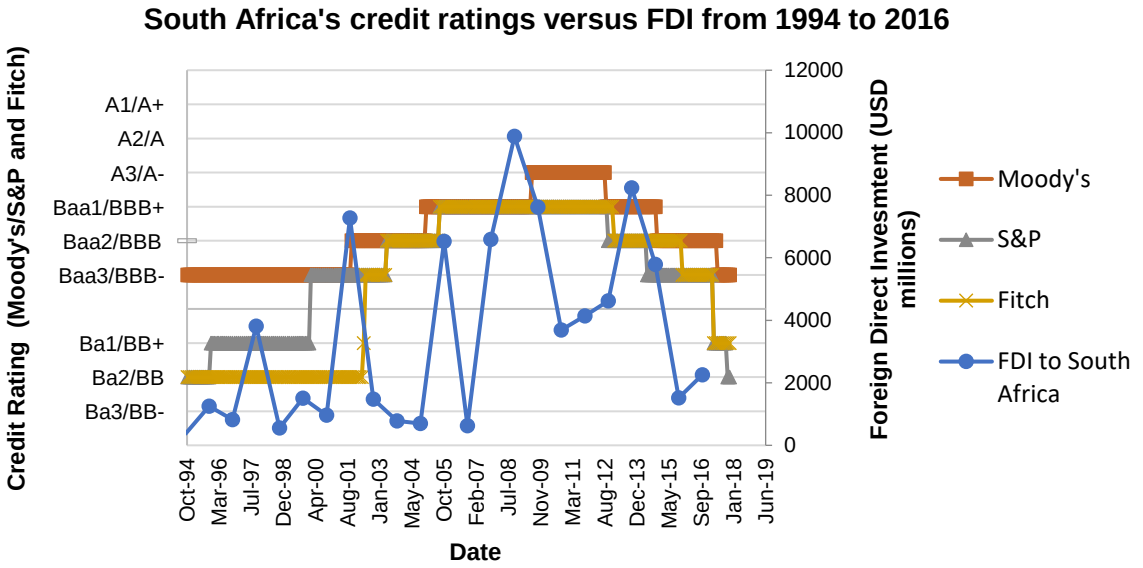

Figure 8 Credit ratings versus FDI in South Africa (Source: World Bank Group, 2018)

Due to the sensitive responses of FDI to ratings, it can be argued that the high levels of credit rating fees could be worth it for South Africa. However, this could also imply that the country has to align its policy decisions to terms which the CRAs deem as favourable in order to be issued and maintain favourable ratings (investment grade). This can manifest into CRAs controlling the policies and government decisions of South Africa. As CRA ratings are also based on subjective factors, CRAs can perceive political figures as risky and issue downgrades which can in turn increase the cost of borrowing and eventually interfere with political governance in a country.

In South Africa, the downgrade of South Africa to sub-investment grade induced extra pressure towards President Zuma's resignation, as the country experienced numerous downgrades under his term and the cost of borrowing for the country kept increasing. This is a clear example of how the CRAs could deepen the stranglehold of neo-colonialism through manipulating credit ratings. Although a CRA rating has been deemed advantageous to South Africa due to its historical sanctions during apartheid rule as well as the western world's influence and knowledge of accessibility to capital markets, the ratings could be easily construed as a strategy to further push a neo-colonial agenda in which the western-based countries could manipulate the post-apartheid politics of the country.

4.4.2 Tanzania

In 2015, Tanzania's Minister of Finance and Planning announced that the government had concluded talks with Fitch Ratings and was in the process of concluding talks with Moody's (Ng'wanakilala, 2016). Prior to that, Tanzania had announced its intentions of a Eurobond in

2008, but there have been delays because of what the country has described as “protracted legal and regulatory procedures” (Ng’wanakilala, 2014). In 2014, the Minister of Finance and Planning stated that the process has been delayed in the past because the country is new to credit rating services and it intended to proceed with caution (*ibid*). In 2016, the government stated that it aims to issue its first Eurobond to fund new infrastructure projects due to the repeated delays in seeking a credit rating (Ng’wanakilala, 2016). At the time of this study, Tanzania still had not secured a credit rating from any of the big three CRAs. A respondent from a risk insurance agency in Tanzania highlighted that it is a good sign that Tanzania has approached Fitch for a sovereign credit rating prior to the launch of a sovereign bond. However, the respondent noted that this discussion had gone on for years, yet nothing has materialised.

The fact that Tanzania has previously approached CRAs in order to be issued a rating shows that the country has possibly perceived the significance of a credit rating towards influencing the country’s risk perception. It is however possible that the government has not concluded negotiations with the CRAs as they do not see the benefits of paying fees towards the rating. It is also important to note that Tanzania proceeded to issue a bond without a credit rating, which could thus imply that the country did not perceive being rated as a pre-requisite for raising debt through a sovereign bond and possibly also not required in the future either. The fact that Tanzania had not yet been rated as of the time of this study possibly means that the country does not perceive a rating as a priority in mitigating the country’s risk perception or that the country does not perceive itself as risky. It is also possible that even though the country might not be aware of its risk profiling by private-sector investors as well as the influence of a credit rating on the profiling and FDI, it is not keen to align with or be unfairly manipulated through neo-colonial agendas and policy controls engineered through the CRAs.

For the purpose of comparison, Figure 9 shows Tanzania’s FDI in comparison with countries experiencing stagnating or decreasing FDIs after attaining a credit rating. Whereas Tanzania has not been issued a credit rating from the big three CRAs, its FDI pattern shows a similar trend to that of its neighbouring countries (more especially Uganda) which are rated. This insight possibly informs the country’s reluctance to paying fees towards a rating which would possibly not improve on its low FDI flow but could instead add pressure towards conforming to west-guided policy measures. It is interesting to note that the countries experiencing weak FDI trends even when maintaining their credit rating are located in the east and central African region and are relatively close to each other geographically.

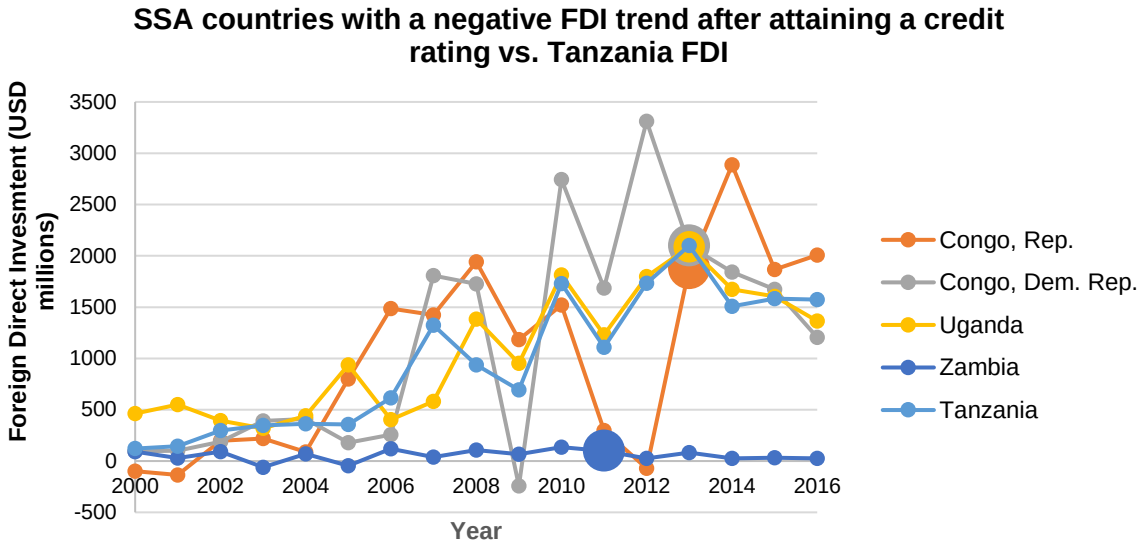

Figure 9 SSA countries with a negative FDI trend after attaining a credit rating vs Tanzania FDI (Source: World Bank Group, 2018)

4.5 Political risks of developing countries on RE-investments

From the data and analysis presented in Section 4.2, political risk is the most prevalent perceived risk. In order to assess how this risk is being addressed by the case study countries, this section substantiates on the political risk categories according to MIGA (2013). Political risk is defined as “the probability of disruption of operations of companies by political forces and events whether they occur in the host country or result from changes in the international environment” (MIGA, 2011:21).

MIGA (2013) states that there was a shift in the roles of private and public sectors in the 1980s due to enhanced efforts towards infrastructure development. The shift in roles came about due to the increasing privatization of public sector services (especially through privatisation and PPP) in the developing world which led to private-public sector collaborations in the following decade. These collaborations, including public-private partnerships and public finance initiatives, facilitated substantial private-sector participation and allowed for risk-sharing between the two sectors in pursuit of what was then thought to be a common goal. In the power sector, these collaborations have led to IPPs using various contract structures such as build-operate-transfer and build-own-operate. A common feature across such initiatives is the role of a government owned off-taker (MIGA, 2013). From MIGA (2013), the top political risks named by private sector respondents towards investment in developing countries are summarised in Table 9 in order of importance. According to the MIGA (2013), for four years in a row, the top political risks named for investment in developing countries were adverse regulatory changes, breaches of contract, and transfer and convertibility restrictions.

Table 9 The most important political risks according to MIGA WIPR 2013 (Source: MIGA, 2013)

	Political risks
1	Adverse regulatory change
2	Breach of contract
3	Transfer and convertibility restrictions on earnings (repatriation)
4	Civil disturbance
5	Non-honouring financial obligations (NHFO)
6	Expropriation

The report further states that energy-sector deals (Power Purchase Agreements (PPAs) with IPPs) in developing countries have proven to experience greater risk with regards to breach of contracts over time than other sector projects such as transportation and water projects. From 2006 to 2013, the majority of MIGA guaranteed projects which experienced breaches of contract leading to disputes were from the SSA region. Based on statistical modelling of the triggers for previous disputes which were dominated by government services, power and infrastructure projects, the projection of the potential breaches of contracts were highest for projects in Latin America, followed by projects in the SSA region. The major factors associated with the experienced breaches of contracts are shown in Table 10.

Table 10 The major factors of reduced contract viability (Source: MIGA, 2013)

The major factors of reduced contract viability	
1	Financial difficulties
2	Inconsistent public policy
3	Tariff disputes

These factors highlight that the triggers for breach of contract are mainly attributed to political risks such as adverse change in policy and non-honouring of financial obligations. The above data also closely corroborates data from the International Centre for Settlement of Investment Disputes (ICSID) which found that the SSA region has the second highest number of investor-state project disputes registered (as presented in Figure 10). This further substantiates on experiences which contribute to the negative risk perception of investment in the SSA region and specifically towards power projects.

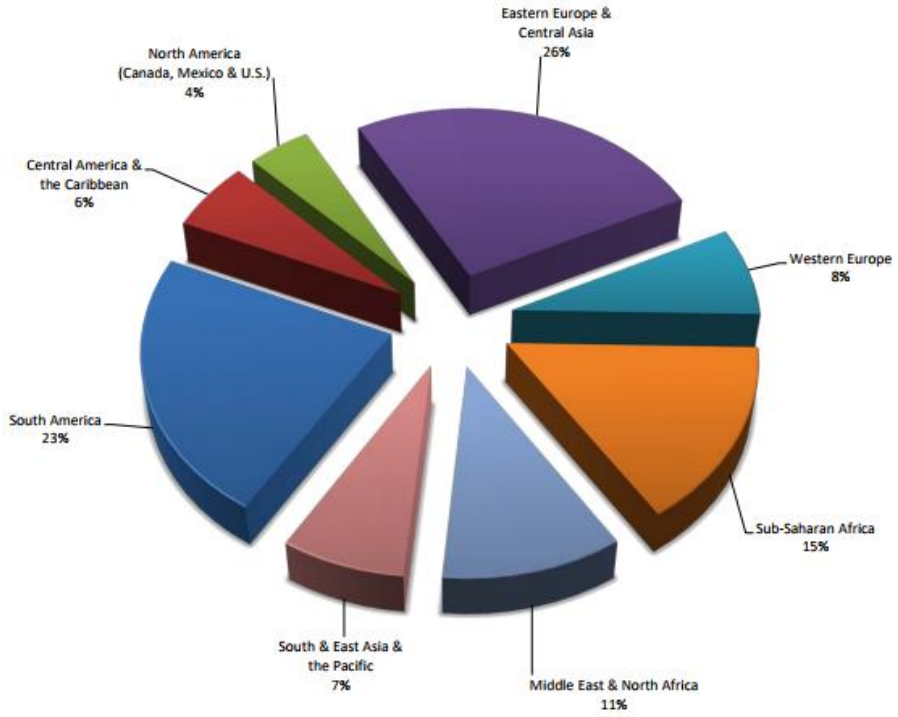

Figure 10 The geographic distribution of all cases registered under ICSID involving state parties, as of December 2017 (Source: ICSID, 2018)

Table 11 presents the political risks expressed by the private sector RE-developer respondents interviewed for this study with respect to the MIGA (2013) categories.

Table 11 The most important political risks according to MIGA WIPR 2013 as well as respondent's reflection on the political risk. (Source: MIGA, 2013)

	Political risks	Resp. A1	Resp. A2	Resp. B1	Resp. B2
1	Adverse regulatory change	X	X	X	X
2	Breach of contract	X	X	X	X
3	Transfer and convertibility restrictions	X		X	
4	Civil disturbance				
5	Non-honouring financial obligations (NHFO)	X	X	X	X
6	Expropriation	X	X		

Respondent A1 in RE-project development, advised that CRA ratings influence the approval process for new RE-investments and therefore affect the cost of borrowing (raising debt/equity) from lenders/investors and thus creates a challenge on access to financing. This refers to the perceived risk to investment mentioned in Section 4.2. According to the RE project-developer respondents, the most commonly expressed political risks were adverse regulatory change, breach of contract, and non-honouring of financial obligations. This was followed by transfer and convertibility restrictions as well as expropriation. As credit ratings

are also influenced by the subjective opinion of political risk factors, they are similarly influenced by the above risks. However, in the narrow sense, a credit rating merely indicates a country's perceived ability to pay its sovereign debt, regularly and timeously. For RE-investments, such ratings therefore act as indicators on a country's ability to honour financial obligations such as those stipulated under a PPA.

Respondent A1 stated that his organisation typically seeks a sovereign underwrite when entering into a PPA with a national utility. 'If the country as well as the utility have a poor rating, this increases the risk of default by the government and raises the expected return on investment'. The respondent further expressed the view that due to the downgrades in South Africa, the country is currently viewed as riskier compared to when it enjoyed investment grade rating. Although South Africa enjoyed RE-investments through the REIPPPP, Respondent A1 advised that the downgrades in South Africa will be reflected in the investor/lender requirements of a higher return to compensate for the higher risk should another purchasing bid window occur. If the cost of borrowing increases, the project costs increases, and therefore the tariffs offered need to be higher in order to ensure worthwhile returns.

This forces RE-developers to seek tariffs beyond the affordability levels of state-owned utilities with which they sign the PPAs. Entering into expensive tariff-level agreements thus often leads to disputes and breach of contracts. Respondent B4 from the Ministry of Energy in Tanzania stated that negotiations with IPPs were delayed because the tariffs presented by IPPs were beyond TANESCO's tariffs to customers and thus beyond TANESCO's affordability. The tariffs were possibly high due to the perceived risks of TANESCO as well as the perceived risk of Tanzania, especially as a non-rated country. The respondent furthermore advised that there was no facility to bridge the financial gap and thus, the projects were abandoned. This further demonstrated how country risk can hinder RE-development even when the electrification backlog is so severe as is the case for Tanzania.

With respect to the RE-developer respondents, the risk of non-honouring of financial obligations can be directly linked to the credibility of the off-taker, which is usually a state-owned power utility. If the utility is not rated or perceived to be uncredit-worthy, a government guarantee is likely to be required. If the country is itself perceived as risky (with or without a rating), then the risks of honouring financial obligations are unlikely to be adequately mitigated. Respondent A1 advised that if the credit rating is weak, they then seek instruments that mitigate the sovereign risk. Such instruments include Political Risk Insurance (PRI) or Partial Risk Guarantee (PRG).

Non-honouring of financial obligations, among other contractual terms, could eventually lead to breach of contract and thus trigger dispute resolution. If the policy terms for dispute resolution are not consistent with an investor's desires, such as international arbitration, then the risk of breach of contract is higher. With respect to the case study countries, this is further substantiated in Sections 4.6.1 and 4.6.2.

Respondent B1 in RE-project development expressed the opinion that adverse regulatory change is perceived as a risk due to the perceived weakness in institutions and the varying attitudes of the different regimes towards private-sector investors. The risk is prevalent due to the political ideology of the country and its regime. As the adverse change of policy also impacts a country's credit rating, this risk can affect the RE-project developer's expected profits due to changes from the status quo or subsequent increases in the cost of borrowing.

The political ideology of a country could also increase the risk of transfer and convertibility restrictions as well as the risk of expropriation. These risks are all factored in the rating, and thus return to affect access to financing, and ultimately the level of RE-investments. CRAs can therefore have a significant impact on the levels of FDIs in the region as well as RE-investments specifically.

As investors seek guidance on a country's policies in order to mitigate risk, the country's national investment policy is expected to address the concerns of private-sector investors on a general basis, and sector policies, on more specific basis. The directives of the national private-sector investment policies can reflect a government's attitude towards private-sector investors and its awareness of the perceived risks of the country in general. In order to analyse the extent to which public-sector risk perceptions are aligned with those of the private-sector investors, the investment policies of the two case studies are assessed with respect to the private-sector investor political risk concerns as substantiated in this section.

4.6 Investment policies

4.6.1 Investment policy of South Africa

Private-sector investments in South Africa are governed by the Promotion and Protection of Investment Act 22 of 2015. Table 12 shows the political risks addressed by the act.

Table 12 Political risks addressed by the Promotion and Protection of Investment Act 22 of 2015.

Political risks addressed by the Promotion and Protection of Investment Act 22 of 2015		
1	Adverse regulatory change	X
2	Breach of contract	X
3	Transfer and convertibility restrictions	X
4	Civil disturbance	
5	Non-honouring financial obligations (NHFO)	
6	Expropriation	X

The act is a revised version of the Promotion and Protection of Investment Act of 2013 where the revisions aimed to respond to concerns by foreign investors with regard to preference to Black Economic Empowerment (BEE) in context of international arbitration (Farish, 2016). The act allows for the Minister of Trade and Industry to make regulations by notice through government Gazette. This clause allows for adverse regulatory change. The act clearly states that a foreign investor may expatriate funds subject to taxation and other applicable legislation, which allows investors protection against transfer and convertibility risks.

The act also addresses dispute resolution (relates to risk of breach of contract), whereby the act allows for international arbitration but only after the exhaustion of domestic remedies. This clause, however, gives investors a negative risk perception in that they do not have an understanding of, or confidence in, South Africa's judicial system which can also be perceived to be biased based on the fact that the mediators would most likely be South Africans. Whereas the act of 2015 removed the clause for expropriation from the previous act of 2013, it still retained a 'right to regulate' clause which allows the government, according to the constitution, to take measures which include readdressing historical, social and economic inequalities and injustices as well as achieving the realisation of socio-economic rights and protection of security interests including the financial stability of the republic. This can be construed to imply government manoeuverability on expropriation while also allowing technicalities towards repudiation on its previous commitments. It should be noted, however, that Section 25 of the Constitution of the Republic of South Africa,1996, allows for the expropriation of property with compensation, even though in February 2018, this was targeted for amendment to allow for the expropriation of land without compensation (Gerber, 2018). This highlights the potential of abrupt policy change even in South Africa.

Although the South African policy has demonstrated gaps which renders it prone to adverse regulatory change and expropriation risk, it also offers protection to investors in terms of

breach of contracts by allowing international dispute resolution, which in turn addresses the potential risk of non-honouring financial obligations. The policy also specifically addresses transfer and credibility in favour of investors. Although the political ideology of the country can catalyse all the political risks mentioned in this report, the history of an independent judiciary, the allowance of international arbitration, the strength of institutions, and the commitment to credit ratings all come together to imply that the government's attitudes towards risk perception attempt to align with those of the private sector.

4.6.2 Investment policy of Tanzania

Besides the Tanzanian Constitution, the Tanzania Investment Act of 1997, the National Investment Promotion Policy of 1996, and the Tanzania Revenue Authority Act of 1997 represent the critical legal and policy frameworks governing investment in Tanzania. There are additional legislations which have impacted investment in the country as discussed later in this section.

The Tanzania Investment Act of 1997 has been analysed further due to its more recent promulgation compared to the other acts listed. It is worth noting that the act has not been revised for 20 years, which could suggest that either the act is well grounded or possibly reflect the country's low priority with regard to perceptions by private-sector investors. The act mandated the establishment of the Tanzania Investment Centre (TIC) which was tasked with the objective of being a "one-stop centre for investors to encourage, co-ordinate, promote and facilitate investment in Tanzania as well as advise the Government on investment policy related matters" (Tanzania Investment Act 1997:6). The act applies to investors who obtain an investor-certificate from the investment centre based on having met the set guidelines and criteria. Table 13 shows the political risks addressed by the act.

Table 13 Political risks addressed by the Tanzania Investment Act of 1997.

Political risks addressed by the Tanzania Investment Act of 1997		
1	Adverse regulatory change	x
2	Breach of contract	x
3	Transfer and convertibility restrictions	x
4	Civil disturbance	
5	Non-honouring financial obligations (NHFO)	
6	Expropriation	x

The act states that the Minister, after consultation and guided by advice of the Board, may make regulations towards giving effect to the provisions of the act. As the Board comprises of eight people with at least two members from the private sector, this shows that there is a

level of consultation with private-sector concerns before regulatory changes are effected, which could therefore imply mitigation of the adverse regulatory change risk.

The act also states that disputes between foreign investors and the Tanzania Investment Centre or the Government may be submitted to arbitration in accordance with the arbitration laws of Tanzania for investors or in accordance of the procedures of the International Centre for the Settlement of Investment Disputes (ICSID) or within the framework of bilateral or multilateral agreements between the Government of Tanzania and the investor's government. By allowing international arbitration, the act adheres to the desires of investors with regards to concerns on risk of breach of contract and consequently on dispute resolution for non-honouring of financial obligations.

The act also states that any business enterprise to which the act applies will be guaranteed unconditional transferability through authorised dealer banks in free convertible currency. This addresses and mitigates the risk of transfer and convertibility. The guarantees that no business enterprise shall be nationalised or expropriated by the government, and this is reinforced by the National Investment Promotion Policy of 1996 which highlights the protection of the right to property and prohibits expropriation for the purpose of nationalization. The policy also highlights Tanzania's membership with MIGA and ICSID for the purpose of consolidating investment guarantees as well as boosting investor confidence.

However, in 2017, three bills were passed in parliament with respect to the mining sector following the ban of export of unprocessed gold and copper (Leon and Müller, 2017). The ban and passing of the bills were the outcome of Presidential Orders on investigations into the mining sector in Tanzania which alleged concerns over dishonesty in the declaration of minerals being exported from the country by a foreign owned investor-corporation. The Natural Wealth and Resources (Permanent Sovereignty) Act of 2017 states that parliamentary approval is required for future investor-state agreements towards ensuring that such agreements fully secure the interests of Tanzanian citizens. The act also restricts investors from exporting raw minerals, repatriating funds and accessing international dispute resolution mechanisms. Such legislative changes trigger negative risk perception towards adverse change of policy as well as the potential for breach of contract. Although Tanzania was not yet rated by any of the big three CRAs at the time of this study, Moody's stated that the passing of these bills would further discourage FDI in Tanzania (Moody's, 2017).

The Natural Wealth and Resources (Permanent Sovereignty) Act states that, by notice published in the Gazette, the Minister may make regulations for better carrying out the provisions of the Act. The Natural Wealth and Resources Contracts (Review and Re-

negotiation of Unconscionable Terms) Act, 2017 mandates the government to renegotiate or remove terms from investor-state agreements that the Parliament considers "unconscionable". These two clauses allow the opportunity for adverse policy change and thus raised the country's risk perception. The Natural Wealth and Resources (Permanent Sovereignty) Act further carries a clause which states that "permanent sovereignty over natural wealth and resources shall not be a subject of proceeding in any foreign court or tribunal" (Natural Wealth and Resources Act 2017:8). The clause thus raises the risk perception on recourse with regards to disputes, breaches of contract and consequently, non-honouring of financial obligations.

The Natural Wealth and Resources (Permanent Sovereignty) Act of 2017 states that any earnings acquired from the dealings or disposal of natural resources needs to be retained in banks and financial institutions established in Tanzania. The act further promulgates that it shall be unlawful to keep such earnings in banks outside of Tanzania except where distributed profits are repatriated in accordance with the laws of Tanzania. This raises concerns on the risk of transfer and convertibility.

The Miscellaneous Amendments Act, 2017, (directed towards amending the Mining Act, 2010) also overhauled requirements for storage, transportation and beneficiation of raw minerals as well as increasing the royalty rates and government shareholding in mineral right holdings of private-sector investors. This act also escalates the risk of adverse policy change. The sudden introduction of the three acts with hardly any consultation shows that the Government of Tanzania is prone to adverse policy change which also raises uncertainty over consistency in policy across regimes. The authorization of Parliament to retrospectively revisit investor-state contracts shows that the government is also capable of breaching contracts in which local dispute resolution further raises uncertainty over impartial judgment.

Although the Tanzania Investment Act of 1997 gave room for policy change subject to consultation with a board with private sector representatives, while also allowing for international arbitration for dispute resolution, and guaranteed investors protection against expropriation and transfer and convertibility risks, the bills targeted at the mining sector as passed in 2017 reflect the government's attempt to reverse policy commitments as well as revising its attitudes towards private-sector investors and investment. Whereas the government is aware of investor concerns over political risks, the way they are addressed in the 2017 bills reinforces the negative risk perception. The passing of the bills further implies that the country has opted to prioritise a socialist political ideology which prefers public/state

control over the means of production and therefore limits or becomes ambivalent to security for private-sector investors with regard to their property and investments.

Based on their explicitly stated objectives, these acts were motivated by the government's intention to protect the interests of the People of the United Republic of Tanzania. However, respondent B2 expressed the opinion that these acts have had a negative impact on the country's risk perception by private-sector investors. The respondent further expressed the opinion that the country does not seem to be making great efforts towards addressing risk perception by the rest of the world. This is corroborated by the abrupt change in laws and the ambiguity in private-investor policies.

The respondent observed that 'the government needs to do more, they need to put the good things they are doing out there to offset the bad things that are out there. The government needs to put the decisions of actions into context in order for stakeholders and the general public to understand what led to certain outcomes in order to create a predictable environment. The government also needs to put information on paper and not change policies at public rallies'. However, respondent B2 also noted that the country is showing efforts to curb corruption (also one of the constraints to FDI as mentioned in Section 4.2) and improve on revenue collection in order to boost its capacity to pay debts to its suppliers. The actions which have been taken towards addressing corruption however, may be sending out a contradicting message to private-sector investors.

Since the appointment of the fifth-phase government in Tanzania, numerous prominent and key political and business personnel/officials have been dismissed, arrested, and pursued for past misconducts. Although the government explains in due time the reasoning behind the swift and punitive actions, the affected individuals are often left with no room for defence and this has elevated the negative risk perception. These swift and seemingly uncontested actions have frightened investors especially with regards to uncertainty over the independent role of the judiciary and human rights institutions. However, the same actions are creating awareness that country policies, when enforced and strictly adhered to, could rectify what was perceived in previous regimes as a state in which transactions and business deals can be pursued through back-door channels.

4.6.3 Summary

The major concerns of private-sector investors lie in the predictability of the respective country's government and recourse with regards to an undesired event involving the government. Although policies in both South Africa and Tanzania allow the government

room for adverse regulatory change, South Africa has more convincingly aligned with private-sector investor needs through its investment policy with favourable terms such as the allowance for international arbitration. Tanzania, on the other hand, has recently escalated negative risk perception through measures/legislation such as the 2017 bills which mandate the government to retrospectively re-address and renegotiate all investor-state agreements deemed to contain clauses considered to be 'unconscionable'.

The differences between private sector risk perception and public-sector responses lie in the attitude of the public sector as reflected in policy responses to the perceived risks by private-sector investors. The breaches of contract are also a reflection of the government's priorities towards debt repayment and the implications of the breach of contract against its numerous agendas at any given time. Even if policies are favourable with respect to adverse policy change and breach of contract, institutions such as the judiciary, and processes on the rule of law need to be consistently effective in order to be perceived as credible especially when a need for recourse arises.

4.7 Conclusion

From the data and analysis presented in this chapter, it is evident that FDI-flow trends do reflect the private-sector investor risk concerns of the SSA region as well as for the respective countries. It is also evident that CRA ratings are significantly influenced by FDI concerns. As a result, CRA ratings can be argued to be influenced by the same factors that also influence risk perception of private-sector investors. The private-sector investors therefore rely on sovereign CRA ratings as an indicator of risk profile of the respective country or region. This implies that CRA ratings influence the risk perceptions of private-sector investors. As the ratings of the countries in the SSA region are predominantly weak, the status quo risk perception of the region is also consistently weak. This is evident through the CRA ratings, the low levels of FDI, and the high interest rates on sovereign bonds. As argued by Asiedu (2001), by virtue of being located within the SSA region, any country in the region has an unsolicited negative risk profile even if it may not have solicited for a formal rating.

The response of an increase in FDIs after being issued a credit rating, (as established by the majority of the SSA countries through data in this chapter), could justify paying for the cost of such a credit rating. However, as argued by Olabisi and Stein (2015), African countries have high rates on sovereign bonds. This brings into question whether being issued a credit rating is beneficial for the SSA countries especially where such a rating can be expected to remain at sub-investment grade in the foreseeable future. Given that the interest rates attained on a

sovereign bond can be expected to remain high, this implies that the country would most likely pay for a credit rating with no added benefits, while at the same time having to endure the pressures to align governance and policy to criteria administered by the west-based CRAs who are likely to drive what is often construed as a neo-colonial agenda through the rating mechanism. As a result, credit rating agencies are viewed as some of the cogs on the neo-colonial agenda wheel, as discussed by Ioannou (2016). Their opinions tend to be perceived as fact and their ratings are imposed on nations in order to issue sovereign bonds which are deemed to not reflect fairness/equity with regard to the developing country's interests.

RE-developer respondents made reference to CRA ratings as an influencing factor towards making investment decisions. Due to the negative risk perception of the SSA region (as presented in Chapter 4), the cost of borrowing is high, and this makes access to cheaper financing more difficult. With high cost of borrowing (due to higher investor/lender expected returns), the ability to offer affordable tariffs to highly indebted and weak-rated state-owned utilities in the region is limited. This in turn, weakens the level of RE-investments in the region. Through the secondary data presented and analysed, it is evident that energy-project investors also have a negative risk perception on the region. This is further substantiated by the high record of disputes and breaches of contract arising from the region. The tariffs offered in the region also tend to be relatively higher mainly due to the negative risk perception and the expected high returns on investment.

South Africa's adherence to CRAs criteria demonstrates a more aligned understanding of the influence of credit ratings on country-risk perception by private sector investors. Due to the country's more convincing alignment of governance and policy measures to the CRA's criteria, South Africa has enjoyed the advantage of higher ratings and lower risk perception than most countries in the region, and more specifically, Tanzania. However, it has recently experienced several downgrades which have harmed its reputation for investments. In spite of the downgrades, the country still enjoys a strong financial system, infrastructure, a history of institutional robustness as well as sustained judicial autonomy. The country's major downfalls have been the political instability in the executive branch, within its leading political party as well as the weak balance sheets of its state-owned utilities. However, the higher ratings are reciprocating the country's higher level of FDI relative to other countries in the region, and especially its relatively higher level of RE-investments. South Africa is therefore perceived to be is less risky for private-sector investments relative to the rest of the region and especially when compared to Tanzania.

Tanzania's lack of a rating could imply that it does not acknowledge any of the benefits in being issued a credit rating especially given that its FDI trend has been similar to that of its rated neighbours, and it has managed to successfully issue an international sovereign bond with an interest rate at levels similar to those of its rated neighbours. On the contrary, the disregard for a rating could also imply that the country does not want to adhere to the imposing implications of a credit rating on its policy choices and directions. Through the abrupt and adverse policy changes made by the government, the country has provided further evidence of its readiness to pursue governance and policy measures which are likely to escalate prevailing negative risk perceptions. Through delays in concluding negotiations with CRAs for a rating, and its geographical location in the SSA region (which is generally perceived as risky), Tanzania is perceived to be relatively risky for private-sector investments. Through the evidence emerging from the recent policy changes taken by the country, it is questionable whether the country is actually concerned about attracting FDI from west-based investors or whether it could be intending to attract funding from other lending regions of the world such as China.

Chapter 5: Existing efforts towards RE-investments and related risk mitigation interventions.

5.1 Introduction

This chapter responds to research sub-question 2 which focuses on the existing levels of private sector RE-investments and related risk perception mitigation interventions. Through primary and secondary data, the chapter substantiates on the level of private sector RE-investments in the case study countries in order to reflect investor-interest in the sector. The chapter also substantiates on the related risk mitigation measures in order to understand the extent to which the countries are encouraging private-sector investments in the sector. The analysis and evaluation of the levels of the RE-investments are presented with respect to South Africa and Tanzania (see Section 5.2 and 5.3 respectively) under the following sections:

- Levels of RE-investment in the case study countries.
- Commitment towards RE-investments in the case study countries.
- Efforts towards promoting RE-investments in the case study countries.

Data abstracted from interviews with private and public-sector participants with respect to the content of Chapter 5 are presented in Table 14 below.

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Table 14 Presentation of Chapter 5 primary data

Chapter 5 Primary data					
Subject	**Region**	**Question**	**Respondent**	**Responses**	**Data abstracted**
Private sector risk perception	SSA	What factors are considered when evaluating investing in RE-projects?	B2	The power master plan or energy plan of a country is a vital consideration when planning to enter a country as an in investor in power generation.	The planned approach to securing the energy mix can signify/guide risk perception towards energy project investments in any country.
Private sector risk perception	SA	What is the perception of the utility in South Africa?	A2	Eskom is in the classic utility death spiral, they continue to increase tariffs by double digits and this causes greater defection from grids. Consumers cut back on energy use through energy efficient technologies and renewable energy technologies. This reduces revenues for Eskom. Eskom increases tariffs further and spiral continues.	Eskom is currently undergoing 'the classic national utility death spiral'. The relatively high tariff increment requests raised alarms of Eskom's potential inability to pay its suppliers and other debts.
Private sector risk perception	SA	What is the perception of South Africa in terms of RE-project	A1	The REIPPPP offered a well-structured set of transactional advisory documents in every field-environmental, financial etc. Leading consultants from each field were seconded to the REIPPPP to run it and develop the PPA.	The continuous adaptation of the PPA by the REIPPPP in South Africa has made it an extremely bankable document which addresses various

		investments?			potential disputes.
Private sector risk perception	SA/SSA	What is the perception of South Africa in terms of RE-project investments?	A2	Experiences with the REIPPPP gave RE-developers confidence and therefore pricing dropped through competitive bidding. The technocrats gave no hint of foul play from Round 1 to Round 4. This system was working and then there was political interference.	Accredited the success of the REIPPPP to the transparency, experience and professionalism of the team. Often capital-intensive energy state-investor projects are prone to interference due to political corruption.
Private sector risk perception	SSA	What is the perception of SA in terms of RE-project investments?	B2	With conversations about energy, there is always a resistance to renewables, the issues are not about renewables being intermittent but more to do with the fact that people can't make a quick buck.	RE-projects are prone to resistance from corrupt government officials.
Private sector risk perception	TZ	What limitations are RE-developers facing in Tanzania?	B2	RE component manufacturers shutting down in South Africa is a lost opportunity for SSA counties. Manufacturers had really driven down the prices of components for everyone in Tanzania. Due to the delays in the REIPPPP and the weaker market in SSA outside of South Africa, a factory has shut down and people have had to be laid off.	The shutting down of RE component plants in South Africa would lead to SSA countries having to import the components from suppliers further away and possibly at a greater cost.

Private sector risk perception	SA	What limitations are RE-developers are facing in South Africa?	A2	We have started expanding and seeking projects in other SSA countries in order to keep afloat as we await the outcome of the PPAs.	Developers have started to question their future in the country and have therefore started to venture into other SSA countries.
Public sector responses	TZ	How is progress with Tanzania's 2000 MW Stiegler's Gorge project?	B3	The project has been tendered by the government. If the country is able to complete that project there will be more than enough power for the country, this goes in line the with the agenda of industrialisation which requires a reliable power supply. The government has committed to develop that project.	The development of this project would solve Tanzania's power generation woes and would also be in line with the country's agenda of a high-power demanding industrialisation strategy.
Public sector responses	TZ	Are TANESCO willing develop RE?	B3	Yes, very willing, the government is gauging the competitive bidding system for RE projects. We are now pursuing a project of 150 MW of Solar PV in Shinyanga. This is a government initiative, where the government is trying to support TANESCO to get funding from partners to develop that project.	TANESCO has also shown willingness to develop alternative RE-generation themselves as they are in the process of constructing a 150 MW solar PV power plant in the town of Shinyanga.

Private sector risk perception	TZ	Why is/was Tanzania more willing to invest/seek funding for natural gas rather than renewable energy?	B1	The push for renewables is led by industrialised nations looking to create a market for renewable energy. For SSA countries, investing in RE right now seems straightforward, but in practice you still see conflicting messages from governments about the role of renewables in the energy mix. Politicians wouldn't want to upset their donor funders, so they talk about renewables, but in practice, they are trying to deal with the energy deficit through fossil fuel generation first, because in practice it is the only way to approach it, for resource rich countries like Tanzania that is.	RE is 'driven by developed countries and imposed on developing countries'. Gas and coal are viewed to be the leading sources of the planned energy mix due to the negative perception of renewables as intermittent and fairly novel in comparison to the tried-and-tested gas and coal technologies.
Private sector risk perception	TZ	Is there resistance in Tanzania towards RE?	B2	There are strong perceptions of renewables as intermittent. Private sector RE-developers are holding workshops to explain RE-generation to relevant public-sector experts. We have insufficient generation and therefore RE is required in the energy mix.	Meetings have been held with RE-stakeholders including government entities in order to attempt to alter the government's perception of RE as an intermittent source of power.
Private sector risk perception	TZ	What is presented as an argument for the	B2	Because we have solar and wind, day and night is covered, and peak times are covered. Wind in Tanzania blows best at peak times and blows best	Due to Tanzania's abundance of wind, solar, and hydro power, alternating through the

		intermittence of RE to the public sector?		during the dry season when dams are at the lowest. So, the switch, if managed correctly can contribute significantly to Tanzania's shortcomings on power generation.	power sources with efficient grid management can lead to a much more secure supply of power and thus minimise the tendency of defaulting to fossil-fuel power.
Private sector risk perception	TZ	What other resistance is there towards RE in Tanzania?	B2	There is a perception form the government that IPPs are corrupt, this is because Tanzania has a history of bad PPAs which were emergency power PPAs, in diesel, which Tanzania should not have gotten involved with.	Tanzanian leaders perceive IPPs as inherently prone to corruption.
Private sector risk perception	TZ	What is the perception of the utility in Tanzania?	B2	If we remove the debt, TANESCO will still not profit from tariffs. What EWURA argues is that TANESCO should not be raising the tariffs to overcome their inefficiencies. An issue is inefficiencies within TANESCO. Tanzania also has a lot of losses in the power lines.	Even if the debt is removed from TANESCO, the utility would still not go into profits with the existing tariffs without addressing inefficiencies which lie in revenue collection and power line losses.
Private sector risk perception	TZ	What are the expected tariffs in Tanzania?	B2	TANESCO are only interested in tariffs that are under USD 0.10/kWh in order to address their solvency. That is not hard to achieve for RE-developers, if fair and clear policies are approved.	TANESCO is only open to discuss with power producers who can offer a tariff of USD 0.10/kWh or under due to

					affordability.
Private sector risk perception	TZ	What is the perception of Tanzania in terms of RE-investments?	A1	TANESCO is technically insolvent and has large arbitration cases dating back 20 years and some are very prevalent in the media. There is also a lot of talk about corruption.	TANESCO is viewed as not credit-worthy. Corruption has major influences on the risk profile and perception of the country and the national utility.
Private sector risk perception	TZ	What is the perception of Tanzania in terms of RE-investments?	A2	There is also the risk of renegotiation of the PPA, if you come in at a high tariff and then the government feels they are getting ripped off and a few years down the line they say they are not happy. Over and above this the country and utility have no credit rating.	Renegotiations of tariffs as well as the lack of credit rating are major influences on the risk profile and perception of the country and the national utility.
Public sector responses	TZ	Efforts made by the MoE to promote RE-investments?	B4	In its efforts to promote RE-investment, the government has prepared the relevant policies, regulatory and institutional frameworks through the establishment of the REA and the REF.	The establishment of the Rural Energy Agency (REA) and the Rural Energy Fund (REF).
Private sector risk perception	TZ	Is the government offering any incentives?	B1	Government is offering a lot of support, but the support is in the wrong place. If a green field developer is looking for funding for studies for example, Tanzania has a lot of funding available. However, there is less focus on funding if you get to financial closure and want to raise some debt.	The government is providing financial support for RE-projects in the wrong stages of RE-development.

Public sector responses	TZ	What challenges have you experienced towards RE-development?	B4	Dealing with incompetent developers and land speculators. Someone will pay for wind data and they will go 3 years without any development. Others acquire land in areas with RE-potential and wait to sell that land.	Potential developers buy preliminary data on the wind and solar resources from the Ministry but fail to take any follow up action thereafter.

5.2 South Africa

Through the REIPPPP, from the first bid window (BW) in 2011, South Africa managed to procure 6,422 MW through 112 IPP projects as of June 2017 (DoE, 2017). At the end of July 2017, the combined installation of 3,167 MW across 57 IPPs of RE were operational in South Africa (*ibid*.). This is approximately just under 7% of Eskom's estimated total installed electricity generation capacity of 47 201 MW (Eskom, 2017).

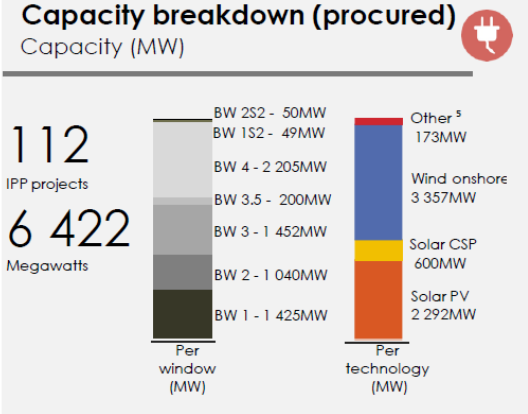

Figure 11 Power procured through the REIPPPP (Source DoE, 2017).

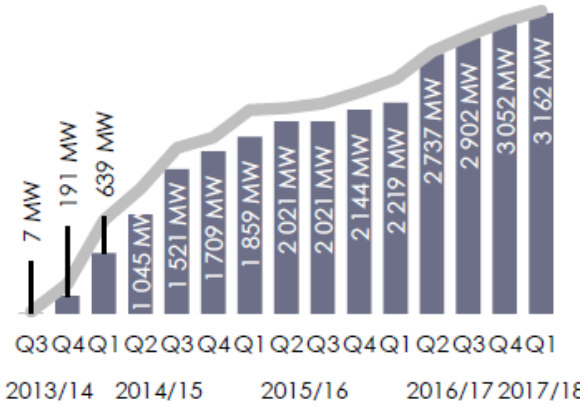

Figure 12 RE power generation operational (Source DoE, 2017)

Over 80% of Eskom's power generation is coal-generated. However, the utility has shown efforts towards renewable energy with a flagship 100 MW wind farm in the Western Cape (*ibid*.). Moody's expressed confidence in South Africa's RE industry due to the rapid progression of the industry and the significant fall in prices of renewable electricity costs from 2011 to 2015 (Njobeni, 2016).

5.2.1 Energy policies

Respondent B2, expressed the view that the agenda of the planned energy mix contributes to the risk perception towards energy project investments in any country. In this regard, South Africa has shown efforts to encourage RE projects through two policies. The National Development Plan of 2010 required that an additional 10,000 MW be generated by 2025 against the 2013 baseline of 44 000 MW. The Integrated Resource Plan of 2010 (IRP 2010-2030) set the target for RE-installed capacity at approximately 20% and RE electricity supplied in the country's energy mix at 14% by 2030 (as presented in Figure 13). As of the time of this study, the updated figures for the energy mix were yet to be announced with the updated IRP 2017 (ESI Africa, 2017).

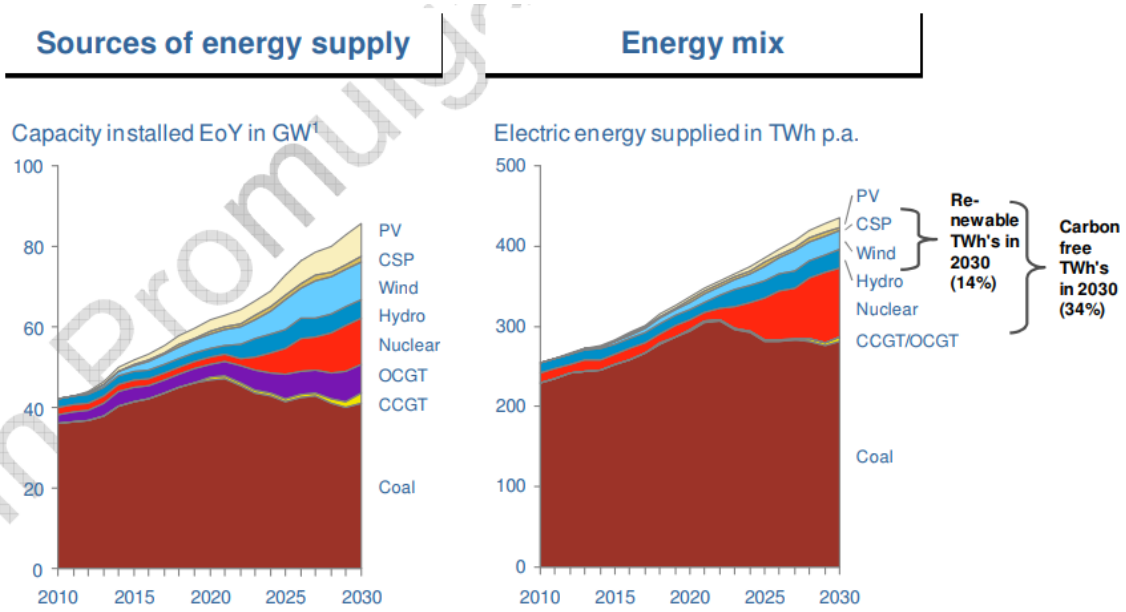

Figure 13 South Africa's power generation installed capacity and energy mix 2010-2030 (Source: DoE, 2011)

As presented in Table 15, the majority of the IPP generation capacity from 2016/2017 in South Africa is RE-based. This shows South Africa's support towards RE-IPPs which thus encourages further RE-investments.

Table 15 Long term IPPs contracted and connected in South Africa as of March 2017, Source: (Eskom, 2017b)

Megawatts	2016/17			2015/16
	Total MW contracted	MW Contracted not yet connected	MW Connected to date	MW Connected to date
RE-IPP Programme	4,000	890	3,110	2,145
Other IPPs	1,005	-	1,005	335
Total long term IPPs	5,005	890	4,115	2,480

The last bid windows of the REIPPPP were during a time when South Africa had investment grade ratings. Figure 14 presents South Africa's CRA ratings against the MW purchased during the REIPPPP bid windows (BWs). Although the REIPPPP bid windows occurred around the same time as Eskom's rating downgrades, local and foreign investors still showed interest in the program and bids were submitted. This shows that investors had a high level of interest in South Africa as an investment destination and this could be a reflection of the country's investment-grade credit ratings.

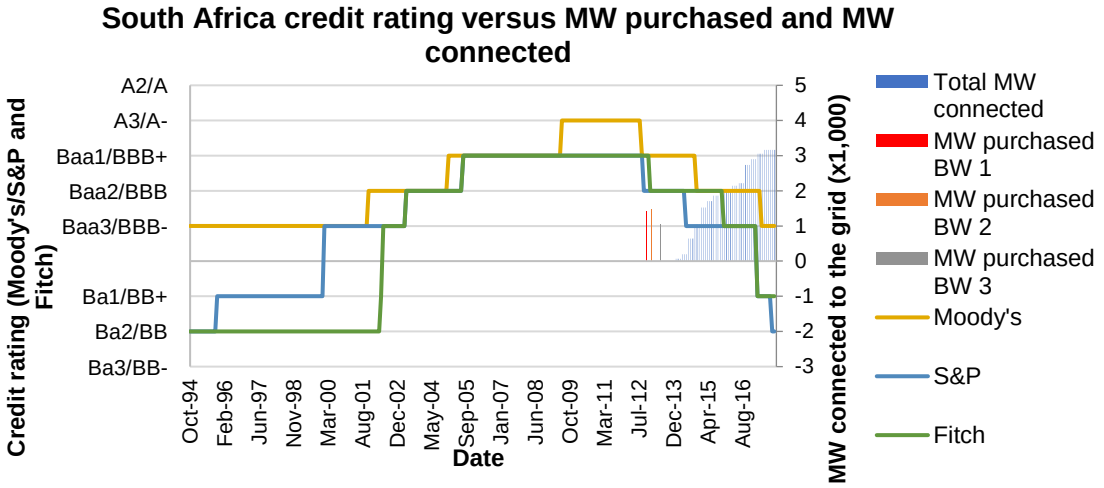

Figure 14 South Africa's sovereign credit rating from the big three versus REIPPPP MW purchased and MW connected

5.2.2 Credit worthiness of the off-taker

Eskom is a state-owned enterprise which is 100% owned by the Government of the Republic of South Africa and falls under the Department of Public Enterprise (DoPE) for administrative matters but guided by policies from the Department of Energy. The utility generates approximately 95% of South Africa's electricity which also makes up 50% of the electricity consumed on the African continent (DoPE, 2017). Eskom has had a credit rating from all the big three CRAs since 1995. This shows the utility's awareness and understanding of a credit rating on lender's risk perception. Eskom's ratings from 2011 to 2017 against the MW purchased and connected to the grid through the REIPPPP are shown in Figure 15.

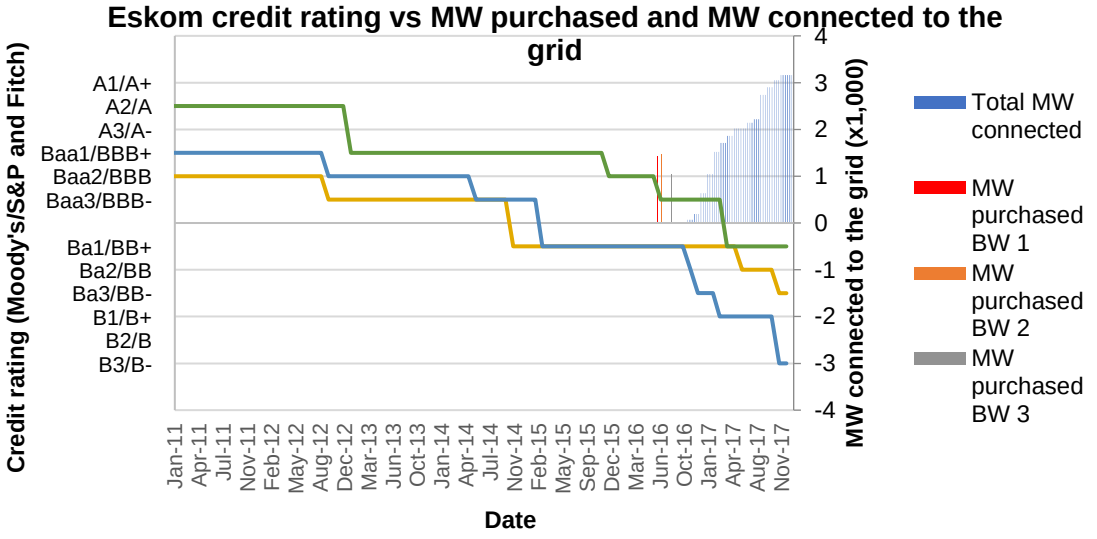

Figure 15 Eskom's credit rating from the big three versus REIPPPP MW purchased and MW connected (Sources: Moody's, 2018. S&P, 2018 and Fitch Ratings, 2018)

The data shows that although South Africa, as well as Eskom, were experiencing downgrades around the time of the bid windows, RE project developers were still bidding in the REIPPPP as the country's CRA ratings were in investment grade. This further implies a positive perception towards RE-projects as worthy of the investments. According to National Treasury's Budget Review of 2017, CRAs were concerned by "the weak balance sheets of the state-owned companies" (National Treasury, 2017:81), which contributed to the country's, as well as the utility's rating downgrades. In 2015, the utility received a ZAR 23 billion (approximately USD 2 billion) bailout from National Treasury, while by 2017, Eskom's debt was estimated at 8% of the country's GDP (Bonorchis and Burkhardt, 2017).

Respondent A2 described Eskom's current status as 'the classic national utility death spiral' where the utility's debt rose due to mismanagement and inefficiencies which in turn led to requests to NERSA for significant tariff increments on the end-users. This in turn leads to lower consumption by end-users as well as users seeking alternative off-grid solutions to power supply which in turn leads to losses of revenue for the utility. Eskom's credit rating deteriorated from 2008, which is significant as the power utility was at some point, more credit worthy than the country itself. In January 2018, S&P announced that Eskom is in danger of default due to the lower than expected tariff increase approved by NERSA for 2017/2018 (Prinsloo, 2018). Eskom had applied for a tariff increment of 20% to NERSA but only a 5.2% increase was awarded (Groenewald, 2017). Respondent A2 expressed the opinion that this raised alarms of Eskom's potential inability to pay its suppliers and other debts. The respondent also stated that the increment was less than South Africa's inflation which is not encouraging. This could imply that the downgrades from the CRAs were actually reflecting the real situation.

S&P's announcement came soon after the Minister of Finance announced that the national government fiscus will not be able to bail out Eskom again and that the highly indebted and cash strapped utility's problems needed to be addressed immediately even though the senior management do not seem to understand the magnitude of the dire situation (Van Wyngaardt, 2018). In January 2018, the Deputy President appointed a new board to Eskom which reflected the country's efforts towards addressing the deterioration of Eskom's credibility and management. However, although critics argue that Eskom's lack of effort towards IPPs (and more specifically RE-IPPs) is due to the lack of incentive as this would weaken Eskom's monopoly on power generation (Eberhard and Naude, 2016), the study found no evidence to suggest that Eskom will be unbundled in the near future in order to address this conflict of interest, which if addressed, could improve power procurement from IPPs and specifically RE-IPPs.

5.2.3 Funding

The REIPPPP was an initiative born from the Department of Energy (DoE), supported by the DTI and backed by Development Bank of South Africa (DBSA) and National Treasury (Eberhard and Naude, 2016). As the off-taker, Eskom is responsible for payments to the IPPs. However, Eskom PPAs with the REIPPPP were all supported by government guarantees (*ibid.*). Although Eskom only got downgraded to sub-investment grade by Moody's and S&P in November 2014 and March 2015 respectively (Eskom, 2015), the government of South Africa, with an investment grade credit rating at the time from all the big three CRAs, also offered sovereign guarantees for RE projects and their respective PPAs. This offered banks and investors enough security on debt repayments such that they did not require political risk insurance. Security on debt-repayment is a key risk mitigative tool to boost investor confidence towards RE-investments, therefore the investment grade ratings of the utility and the country gave investor's confidence towards debt repayment. Project financing by South African banks added another layer of protection, which meant that the risk assessment and sharing was also undertaken by banks. Due to the high capital cost of the RE-projects, they were usually co-funded by the developer with debt and equity finance. The data on financing ratios are shown in Figure 16.

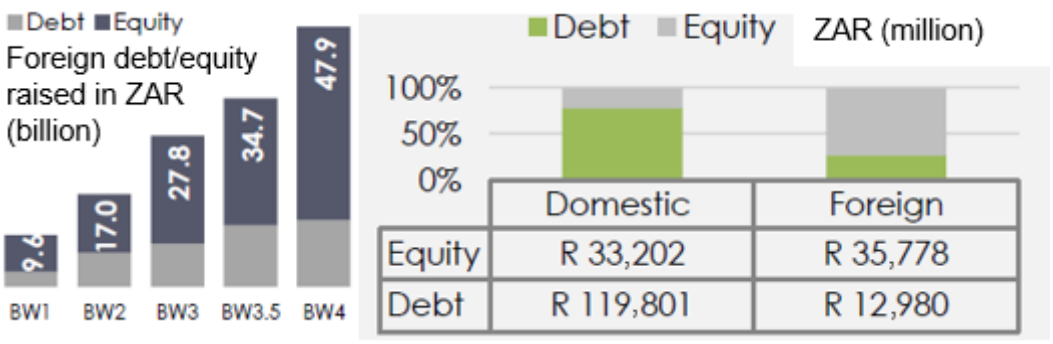

Figure 16 Total local and foreign debt/equity raised in REIPPPP BW 1 to BW 4 (Source DoE, 2017)

The country demonstrated the successful execution of private-sector developer power procurement through competitive bidding by procuring 6,422 MW of power generation from various RE technologies with projects amounting to ZAR 201.8 billion (approximately USD 17.2 billion) since Bid Window 1 in 2011 (DoE, 2017). South Africa was able to raise more than 50% of the required debt and equity domestically throughout the REIPPPP bid windows. This shows that South Africa's capital market is capable of raising a significant amount of debt and equity for RE projects without counting on foreign investors. Equally, the significant level of foreign equity and debt raised, reflects the high investor confidence in South Africa's RE-sector as well as private sector's responsiveness to credit worthy CRA ratings.

5.2.4 Power procurement

Eskom was initially responsible for IPP procurement, but it seemed to have directed inadequate efforts towards this responsibility. The DoE then took over this role, but, like Eskom, it did not seem to have the institutional capacity to run the sophisticated and complex programme it had envisaged such as the REIPPPP (Eberhard and Naude, 2016). The DoE therefore approached the National Treasury's PPP Unit for assistance. Technical staff from the DoE and PPP Unit established a combined team which was called the DoEIPP which had full authority to run the programme and worked outside the formal departmental structure of the government in order to act as a one-stop desk for the REIPPPP roll-out.

The DoEIPP office team leader was seconded from the National Treasury's PPP Unit and had extensively worked on PPP contracts, managing both the consultants and the private sector. This is important because it shows that the program was led by a strong leader who understood private-sector needs as well as the public-sector agenda. This gave the DoEIPP credibility as a unit to effectively champion the REIPPPP process and eventually launch the REIPPPP. Respondents A1 and A2 credited the success of the REIPPPP to the transparency, experience and knowledge of the team as well as the professionalism with regards to deadlines and consultation with all stakeholders.

5.2.5 Power purchase agreement (PPA)

Respondent A2 in RE-project development in South Africa advised that the continuous adaptation of the PPA by the REIPPPP in South Africa has made it an extremely bankable document which addresses various potential disputes. This was coupled with the efforts on contingencies within the PPA. Table 16 shows the political risks addressed by the PPA for the REIPPPP.

Table 16 Political risks addressed by the PPA

Political risks PPA		
1	Adverse regulatory change	
2	Breach of contract	x
3	Transfer and convertibility restrictions	x
4	Civil disturbance	
5	Non-honouring financial obligations (NHFO)	
6	Expropriation	

5.2.6 Stalling of REIPPPP

Even though South Africa experienced a steady flow of RE projects, its world renowned REIPPPP has come to an inconclusive stop due to difficulties with the national utility and off-taker Eskom, which placed the signing of PPAs for any IPP on hold since September 2016 (Eskom, 2017b). Respondent A2 expressed the opinion that often capital-intensive energy state-investor projects are prone to interference due to political corruption. Respondent B2 similarly expressed the opinion that RE-projects are prone to resistance from corrupt government officials mainly because, unlike fossil fuel sources, RE sources (besides bio-mass) are naturally occurring and therefore the opportunities for supply chain corruption are less prevalent.

However, with respect to the REIPPPP, this notion was disputed in the Eskom Integrated Report of 2017, which states that Eskom's dynamics towards RE-IPPs have shifted due to a slowing electricity demand, new built power generators and a significant improvement on optimisation of operational performance (Eskom, 2017b). The report further states that Eskom has reached surplus capacity and also noted a concern over the higher prices of the earlier bid window rounds where the average feed-in tariff for RE-IPPs in 2016 was ZAR 209c/kWh (approximately USD 18c/kWh) against a revenue tariff of ZAR 83.6 c/kWh (approximately USD 7c/kWh). With falling revenues, the report states, Eskom could be put into a position where it will have to use the government guarantees provided to lenders. This explicit reference to the possibility of resorting to government guarantees may have signalled the moment for the downgrade of the utility by the CRAs.

In March 2017, Eskom committed to connecting IPPs up to Bid Window 4.5 as long as they are at a price cap of ZAR 77c/kWh (approximately USD 0.07c/kWh) (Eskom, 2017b). This tariff is lower than some of the preferred bidder's tariffs and, due to the time delays, their tariff bids no longer matched the equivalent net present value. At the beginning of September 2017, the Energy Minister announced that the 26 outstanding RE-IPPs preferred bidder contracts would be signed by Eskom by the end of October. However, there would be a tariff cap of ZAR 77c/kWh regardless of technology (Creamer, 2017). The Minister also announced a moratorium on all future procurement rounds until the finalisation of the long-awaited Integrated Resource Plan (Creamer, 2017b). The Minister said that the pricing decision was guided by consultations (which had been under way since May) between the DoE, the National Treasury, the Department of Public Enterprises and Eskom.

The Minister also stated that the price cap was a result of the desire to protect the government's balance sheets from any failure by Eskom to meet its commitments, which

would in turn trigger off recourse to government guarantees. This would send a negative message to investors as it reflects a negative risk perception by the government on its own power utility. The REIPPPP were therefore instructed to renegotiate the tariffs from Bid Window 3.5 and 4. This commitment did not include preferred bids for Bid Window 4.5. In mid-October 2017, a new Energy Minister was appointed, and this left the proposed signing date of the PPAs in question once again.

This ongoing uncertainty on the REIPPPP in South Africa is rapidly leading investors to lose confidence in the implementation of both policies as well as actual decisions arising from such policies. As the law obliges Eskom to sign the PPAs with the preferred bidders, this has shaken investors' perception of the rule of law in South Africa. The delays in signing the PPAs has shaken investor confidence in government stated policy and has already negatively impacted on prior investment in domestic manufacturing of RE equipment in the country despite the hoped-for expectation that such domestic manufacturing would have been for the long-term interest of RE-development for countries in SSA and not only for South Africa. Respondent B2 in Tanzania advised that the shutting down of RE component plants in South Africa would lead to SSA countries having to import the components from suppliers further away and possibly at a greater cost. Due to the repetitive delays in signing PPAs, respondent A2 stated that RE-developers in South Africa have started to question their future in the country and have therefore started to venture into other SSA countries. Other project developers have had to shut down or scale-back in order to service debts and keep afloat as they await the final outcome.

5.3 Tanzania

Tanzania's electricity generation capacity is estimated at 1,590 MW as of December 2016, of which, approximately 561 MW and 11 MW is hydro-power generated by TANESCO and private small power producers (SPPs) respectively (MEM, 2016). This is significant as it reflects that approximately 37% of Tanzania's generation capacity is hydro which can be considered as RE-based. The remainder of the country's generation capacity is from IPP and TANESCO units which are mostly based on gas, heavy fuel oil, and industrial diesel oil fuels. As of July 2017, approximately 30 MW of RE-based IPPs and SPPs had been commissioned (Tsakhara (2017) - see Appendix I). Figure 17 presents Tanzania's level of RE-based power generation from IPPs and SPPs which became operational from 2000 to 2016.

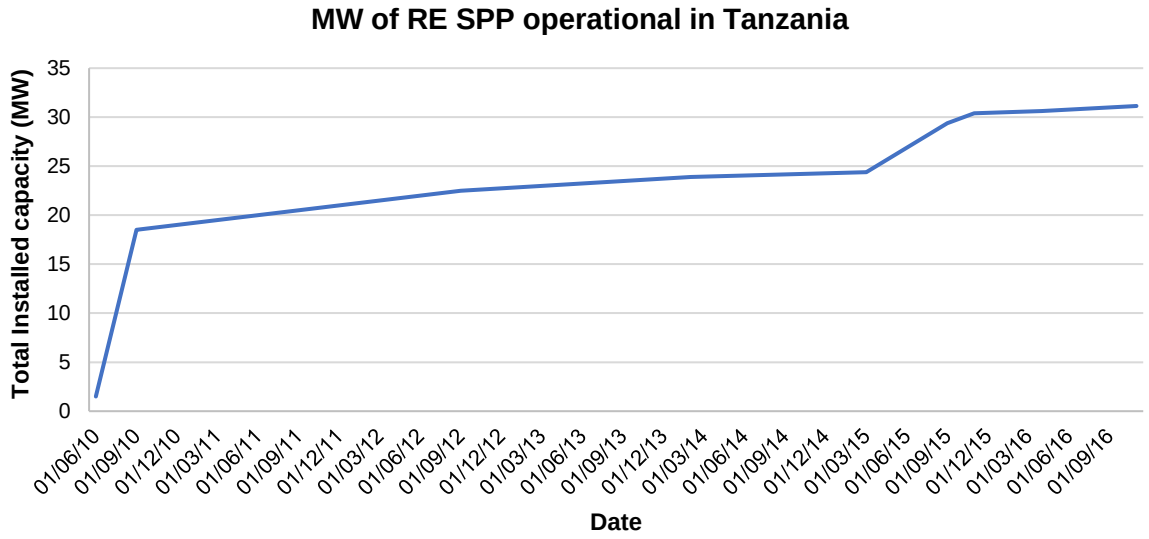

Figure 17 Tanzania RE Small Power Producers (SPPs) which are online (Source: Tsakhara, 2017)

5.3.1 Energy policies

The Electricity Supply Industry Reform Strategy and Roadmap 2014-2025 states that the installed capacity of Tanzania must increase to 10,000 MW by 2025 against the benchmarked capacity of 1,583 MW as of 2014. Table 17 shows the present and planned future generation capacities from the Electricity Supply Industry Reform Strategy and Roadmap 2014 – 2025 (MEM, 2014).

Table 17 Present capacity in 2015 and projected installed capacity by 2025 Source: (MEM, 2014)

Source	2014 capacity (MW)	Additional capacity 2015-2025 (MW)	Capacity by 2025
Hydro	561	1,529	2,090.84
Natural Gas	527	3,968	4,469
HFO/Diesel	495	-	438.40
Coal	-	2,900	2,900
Wind	-	200	200
Solar	-	100	100
Geothermal	-	200	200
Interconnector	-	400	400
Total	**1,583**	**9,297**	**10,798.24**

Due to a high dependence on erratic hydro-power, the country has planned to shift to alternative sources of power. With low electrification rates and inadequate grid infrastructure to electrify rural areas (see Appendix E for indicative statistics), the country has focused on SPP projects in order to effectively address the backlog.

The country has also shown interest in further developing IPPs, even in RE. This is reflected in the proposed energy mix as presented in the country's Power Systems Master Plan of 2016 which highlights the importance of various aspects of power generation such as investment and operational cost, energy security as well as environmental and social impacts of power generation. These considerations show the intentions to transition towards a greener energy mix as emphasised further through the benchmarking of levels of possible pollutants generated through a high coal power generating mix and thus the importance of ensuring a well-balanced energy mix which would be inclusive of RE. Table 18 shows the planned energy mix for 2040 (under the Power Systems Master Plan of 2016) in which scenario 2 emerged as the preferred scenario.

Table 18 Energy generation mix comparison (Source: MEM, 2016)

Generation mix				
Scenario	Gas	Coal	Hydro	Renewables and other
Scenario 1	50%	25%	20%	5%
Scenario 2	40%	35%	35%	5%
Scenario 3	35%	40%	40%	5%
Scenario 4	25%	50%	50%	5%
Scenario 5	50%	35%	35%	5%
Scenario 6	40%	30%	30%	10%

If large-scale hydro is combined with other renewables under the Power System Master Plan 2016, RE-based generation capacity would constitute approximately 40% of the energy mix, from the estimated status-quo capacity of 37%. Due to Tanzania's long history of hydro power dependence, the technology can be expected to remain significant in the energy mix into the long-term. In this regard, the country has emphasised its commitment to developing the 2,100 MW Rufiji hydropower dam at Stiegler's Gorge despite controversies around its environmental impacts on the World Heritage site of Selous Game Reserve (ESI Africa, 2017b). Even though the dam has been in the government's development plans since the 1960s, it was only in 2017 that the government called for bids for the project, with a deadline in October 2017. Respondent B3 from EWURA stated that the development of this project would solve Tanzania's power generation woes and would also be in line with the country's agenda of a high-power demanding industrialisation strategy (Citizen, 2016). The respondent further advised that TANESCO has also shown willingness to develop alternative RE-generation themselves as they are in the process of constructing a 150 MW solar PV power plant in the town of Shinyanga.

Although the policies show that Tanzania has intentions of increasing its generation capacity through power procurement from IPPs, the majority of the existing IPP generation capacity (according to the Power System Master Plan 2016) will be fossil fuel based. This is contrary

to South Africa's situation where RE IPPs generate more than approximately 80% of the total IPP generation capacity as shown in Section 5.2.1. The policy's projected installed capacity show that Tanzania favours increasing its generation capacity through fossil fuel generation, specifically based on natural gas. This implies that in order to increase the country's generation capacity, the government will gear significant effort towards facilitating private-sector investments in natural gas power generation.

Tanzania has had repetitive delays in the planned USD 30 billion liquefied natural gas plant, mainly due to land acquisition and regulatory uncertainty (Ford, 2017). The plant is intended to make use of the country's 57 trillion cubic feet (tcf) of natural gas reserves (*ibid.*). In 2017, the country also forced existing oil upstream private-sector investors to renegotiate contract terms vested by the Natural Wealth and Resources (Permanent Sovereignty) Act of 2017 (see Section 4.6.2) (*ibid.*). Such experiences show that Tanzania is not adequately facilitating private-sector investment in natural gas power generation and also reflects the government's attitude towards private-sector investment in the broader natural resources sectors of the country. This further raises uncertainty as to whether the country is capable of meeting private sector expectations towards RE-private-sector investment, and thus raising concern on whether private-sector investors would be willing to participate in RE-investments based on the unsatisfactory experiences in the natural gas sector to date.

Tanzania's underpreparedness for private sector participation in the energy sector market has been demonstrated through its hiccups on the policy framework with regards to the exploitation of the gas industry where production and development has been delayed repeatedly due to misalignment of interests between the developers and the government. This has forced major developers to direct/reprioritise their investments into other parts of the world where they believe governments are more embracing of the private-sector's role (Ford, 2017).

The large gas reserve discoveries not only changed the mindset of the country in terms of power generation, but also influenced politicians to make promises of economic development off the back of the gas revenues. The lobbying for gas has therefore been influenced by the practical need to address baseload capacity with a technology perceived as reliable as well as campaigning for socio-economic development through gas not only for power generation, but also production for export.

Respondent B1 expressed the view that the agenda for RE is 'driven by developed countries and imposed on developing countries'. In order not to upset donor funders, developing countries may portray an agenda of a greener energy mix when the actual intentions are

geared towards non-renewable energy in order to realise short and medium-term solutions for their electricity deficit. In other words, Tanzania and most developing countries currently suffer from electricity deficits and prefer to focus on the short and medium-term solutions with familiar technologies in order to meet demand or gain surplus before they can shift greater focus into alternative energy, which would be cheaper in the long run. This may be evident to some developers as a risk concern as noted by Asiedu (2001) where investors may perceive reforms towards a greener energy mix as temporary and mainly driven by aid-conditions of the international finance institutions and would therefore be prone to perpetual reversals once a given aid-flow/cycle ends.

Major natural gas discoveries at approximately 57 trillion cubic feet (Ford, 2017) have driven Tanzania to place natural gas as a leading power source in the proposed energy mix. Respondent B1 also added that gas and coal are viewed to be leading sources of the planned energy mix due to the negative perception of renewables as intermittent and fairly novel in comparison to the tried-and-tested gas and coal technologies. This agrees with Schwerhoff and Sy's (2016) opinion that many investors, as well as governments, are less enthusiastic about RE-power generation than non-RE power generation due to prevailing familiarity with the latter.

The intermittency of RE is often counteracted with the solution of energy storage. However, this remains as an emerging and highly expensive technology at the moment, more especially on a large scale. Respondent B2 advised that a meeting was held with RE-stakeholders including government entities in order to attempt to alter government's perception of RE as an intermittent source of power. The respondent also advised that due to Tanzania's abundance of wind, solar, and hydro power, alternating through the power sources with efficient grid management can lead to a much more secure supply of power and thus minimise the tendency of defaulting to fossil-fuel generated power.

5.3.2 Credit worthiness of the off-taker

The Tanzania National Electricity Supply Company (TANESCO) is the national power utility which is 100% owned by the government. Given Tanzania's history with IPPs (see Section 2.6), it is clear that the country has gone through a tainted experience with respect to power projects and more especially with regards to dealing with IPPs. Respondent B2 advised that this is what has driven Tanzanian leaders to perceive IPPs as inherently prone to corruption. This is more so especially with emergency diesel power generators which have historically involved inflated tariffs and persistent cases of corruption. Eberhard *et al.* (2016) argue that Tanzania's experience attests to weaknesses in the planning and the implementation of

power procurement projects and that the country should gear itself towards addressing these weaknesses instead of attributing such experiences as inevitable drawbacks of private sector participation in the energy sector.

With numerous arbitrations and charges concluded, and with some still pending, it is no surprise that TANESCO is in a serious debt crisis. Even though it has been a victim of corporate looting, it is not blameless for the factors leading to its negative balance sheet. Respondent B2 expressed the view that, even if the debt is removed from TANESCO, the utility would still not go into profits with the existing tariffs without addressing inefficiencies which lie in revenue collection and power line losses. To substantiate on the point of weak revenue collection, as of February 2018, the Ministry of Energy owed TANESCO over USD 500,000 in unpaid bills (Kaboyoka, 2018). In January 2017, the utility's debt was estimated at USD 363 million and the country was said to be in talks with the World Bank for a USD 200 million loan to clear the utility's debt-arrears (Ng'wanakilala, 2017b).

The regulator, EWURA, argue that TANESCO need not raise tariffs but rather address its system inefficiencies. This view was further emphasised after the President sacked the Managing Director of TANESCO in January 2017 after becoming aware that EWURA approved a power tariff increment of 8.53%, even though it was less than half of what TANESCO had requested in order to stem losses (Ng'wanakilala, 2017). The President rescinded the tariff increment and stated that the increment would hinder the government's plans to industrialise the nation, which Citizen (2016) states, there is no clear policy which could guide such a plan. Citizen (2016) further states that whereas Tanzania has numerous policies, they are not realistically integrated, and the key problem lies with the history of inadequate policy implementation in the country.

Respondent B2 advised that currently, TANESCO is only open to explore discussions with power producers who can offer a tariff of USD 0.10/kWh or under. This is because the utility cannot go beyond this figure and still accrue a profit. This ceiling tariff level has also been placed in order for TANESCO to solve its insolvency problems as well as its risk profile especially due to its numerous and long-lasting arbitration cases and debt, which mainly arise from its track record of entering into expensive tariff agreements which it later disputes and then renegotiates.

Cooksey (2017) states that the disputes of tariffs and contractual terms have arisen due to direct negotiations and corruption which rendered the country to enter into high cost contracts. Respondents A1 and A2 named corruption and renegotiations of tariffs as major influences on the risk profile and perception of the country and the national utility. In addition,

TANESCO does not have a credit rating with any of the big three CRAs. This could be perceived as a demonstration of the utility's lack of interest in aligning its practices and operations with investors' assessment criteria for investment and/or a lack of awareness of its risk perception by such investors. However, due to a weak payment history, weak balance sheets, and weak history of contract enforcement through several disputed cases, it is quite clear that the utility can only be issued a weak rating, for a fee, which would make its cost of borrowing high and therefore possibly unattainable.

Although the regulators in Tanzania have shown efforts to consult stakeholders, create clear policy and present a timely plan of how power is procured, the country still displays a weak investment climate, ambivalence towards private-sector investment, a vertically integrated state-owned public utility with technical and financial challenges as well as poor planning and procurement practices. Even though the country has a regulator mandated to ensure more transparent and competitive procurement, it has primarily relied on unsolicited bids and direct negotiations more than on competitive tenders for its electricity generation contracting. As a result, some IPPs in Tanzania stand out globally for their outlier-level of high tariffs and controversial contracts.

Gazette Notice 292 of 2016, (The Electricity Market Re-Organization and Promotion of Competition Regulations), states that Tanzania intends to unbundle generation activities from transmission and also unbundle transmission from distribution. This entails an attempt towards decreasing the conflict of interest where a single entity serves as the generator as well as the off-taker from IPPs. Potential losses of revenue as perceived by national power utilities (arising from losing the monopoly over power generation) can induce both implicit as well as explicit resistance towards IPPs. As discussed in Section 2.4.2, the process of unbundling proved to be successful in Kenya especially with regard to purchasing power from outside the national utility's generation plants (Eberhard and Gratwick, 2011). Such restructuring seems to be crucial towards boosting the development of RE-IPP projects with private-sector investments and participation in the energy sector.

5.3.3 Funding

Respondent B4, from the Ministry of Energy (MoE) advised that in its efforts to promote RE-investment, the government has prepared the relevant policies, regulatory and institutional frameworks through the establishment of the Rural Energy Agency (REA) and the Rural Energy Fund (REF). Tanzania has facilitated funding opportunities for RE development through REA where agencies such as the Swedish International Development Cooperation Agency (SIDA) and the World Bank provide re-financing facilities to participating commercial

banks for loans in off-grid RE-projects (REA, 2016). Under the World Bank funding programme, the funding is for projects not exceeding 10 MW, and USD 42 million has been budgeted for short and long-term financing of which, USD 32 million is for long term financing and the remaining USD 10 million is for short term financing. The programme is intended to address the existing financial barriers for local developers, particularly with regard to the absence of long-term debt for infrastructure projects. Through REA, the government has also set aside funding for mini-grid projects under the Results Based Financing (RBF) grants which are prioritised through policy due to the inadequate national grid network, and thus the utility finds mini-grids as quicker and cheaper (in the short-run) solutions to the electrification goal. Mini-grids are thus viable in areas to which the government has not planned for the extension of the national grid in the near future as the plans for future national grid infrastructure are readily available from the Ministry of Energy.

Respondent B1 advised that while the government is providing financial support for RE-projects, so far, the support has been misplaced. In terms of providing support for financing, there are opportunities for raising debt through project re-financing from the Tanzania Investment Bank (TIB) via REA. The TIB debt raising opportunity would be cheaper debt financing due to lower interest rates offered and would thus help to make projects more viable. The problem however, still lies with payments to service the debt during the course of the project stages (as discussed in Section 2.4.3). Banks intending to provide funding towards the implementation of RE-projects would still expect a commitment on debt repayment which would in turn require a developer to get a commitment from the off-taker, which is TANESCO.

As TANESCO has a weak credit-worthiness perception and without a credit rating globally, the banks facilitating transactions would also want some form of guarantee and therefore the problem comes back to the risk of default by the off-taker. This is further complicated by the country's negative risk perception attributed to its global location (in the SSA region) as well as its lack of credit rating. While the financing efforts which the government is putting towards raising investment capital for RE project development are applauded, more effort should be directed towards mitigating the risk perception of the utility (TANESCO as the off-taker) against defaulting on payments to the RE-project developers.

5.3.4 Power procurement

Tanzania's energy regulator, Energy and Water Utilities Regulatory Authority (EWURA) is uniquely structured in that the Minister of Energy and Minerals (now Minister of Energy) is responsible for the energy policy guidance to EWURA, but administrative matters, such as

the appointment of board members and annual reporting, are the responsibility of the Minister of Water and Irrigation. This has been effective in giving a sense of autonomy on regulatory decisions from the Ministry of Energy in order to accommodate private sector interests in decision making.

The autonomy has also given EWURA the required authority in power procurement, which has been reflected in its efforts to conform to competitive bidding in RE. EWURA has also taken efforts to provide a clear bidding schedule for wind and solar SPPs from the announcement of the Request for Quotation (RFQ) to the commercial operation (commissioning) stages. This schedule provides all the major milestones in the process and has a deadline of 33 months for solar and 51 months for wind in total (EWURA, 2016). However, these efforts still do not address the negative risk perceptions of the off-taker, nor do they mitigate other political risks in order to attract private-sector investment.

In 2008, Tanzania initiated the avoided cost (see definition of terms - Section 1.9) approach towards determining RE-tariffs, where RE project costs were paid back on the basis of TANESCO's customer tariff pricing structure. This was challenged particularly by solar and wind energy developers as the investment costs were high and the investors were not able to recoup their capital within the planned time (ESI Africa, 2015). Respondent B4 from the Ministry of Energy stated that the government was receiving tariff offers from RE-developers that were higher than TANESCO's customer tariffs. Given that there was no funding facility to compensate for the difference, negotiations with developers could not reach financial closure.

Furthermore, the respondent observed that some potential developers would buy preliminary data on the wind and solar resources from the Ministry but fail to take any follow up action thereafter. The respondent also stated that whereas some IPP projects were able to reach financial closure, it was later realised that the respective developers did not have adequate funding or technical capability to implement the projects. Such experiences made the MoE sceptical towards private-sector investors. Due to the government's experience of disputes with IPPs over high tariffs and capacity charges which led to penalties and arrears for TANESCO (Cooksey, 2017), the government wanted to ensure that capacity charges were no longer included in contracts with power producers. As a consequence of the expressed concerns as well as the experienced challenges, the government decided to investigate the alternative of moving towards the competitive bidding procurement system.

5.3.5 Standardised power purchase agreements (SPPAs)

According to a respondent from EWURA, a review was recently done for the SPP framework rules in order to incorporate a number of challenges shared by the stakeholders. However, two major changes were made to the Standardised Power Purchase Agreements (SPPAs) in June 2017 which, respondent B1 advised, removed private sector risk mitigation measures from revised SPPAs. Firstly, the clause on the protection against change of law was removed which thus diminishes the level of certainty for investors on their investments. Secondly, the 'lapse of consent' clause was removed. As the government is responsible for providing the consents required for the progression of an SPP development, this clause allowed a developer to trigger 'force majeure' in the event that the government did not deliver its commitments on time or never delivers at all. With the removal of this clause the government has less risk in the process and instead shifts most of the risk to the developer. The removal of the mentioned clauses occurred soon after the bills were passed in the mining sector (see Section 4.6.2), which thus goes towards making it explicit that the government is creating a less conducive environment for private-sector investors through transferring complementary public-sector risks to project investors.

Cooksey (2017), summarises the series of corruption scandals which occurred in Tanzania with IPPs. Respondent B4 from the MoE in Tanzania stated that the country has a bad history with IPPs because of bad contracts when most of them enjoyed government guarantees. The government therefore had to pay when TANESCO failed to pay. Due to this history, the government no longer wants to provide guarantees for power projects. 'In order to avoid further burdening the government fiscus, we are still waiting for a resolution from the higher authorities for the way forward on power procurement without government guarantees with IPPs, which includes renewable and non-renewable sourced IPPs'. At the time of this study, a new draft legislation was under review concerning large scale PPAs which had gone through discussion with stakeholders. However, it was still awaiting approval from the MoE.

5.3.6 Recent development for IPPs

Respondent B1 shared a report which stated that on the 1st of May 2017, six large scale IPPs received notification from TANESCO to shift from the IPP model of project development, to an engineering, procurement and construction plus finance (EPC + Finance) model of project development (TPSEPD, undated). The reason for this relates back to the corruption and high charges TANESCO experienced in the past. Respondent B3 from EWURA stated that the country does not want to sign contracts with IPPs which have capacity charges. Therefore, the government has started to look into operating its own

projects and investments so that it does not get IPPs on board and would thus avoid capacity charges. Respondents A1 and A2 in RE project development stated that without capacity charges, an energy project in the region is not financially viable.

The report further states that “IPPs in Tanzania have sunk well over USD 100 million to date in development activities such as due diligences, feasibility studies, environmental impact assessments and numerous technical, financial, legal and regulatory activities necessary for the implementation of such projects” (TPSEPD, undated:2). However, related implementation processes, in most such projects, has stalled. This range of activities and efforts are yet to result into operational plants due to prolonged processes, lack of engagement and decision making, and a changing/unstable investment environment. The report expresses the opinion that the announcement to transfer to EPC + Finance has reduced investor confidence in committing funding to Tanzania, while at the same time placing all investors’ capital at risk and thus undermining the efforts made by local investors to build capacity in order to continue to play a role in the Tanzanian energy sector. The respondent stated that the report was being jointly compiled by private sector energy developers in Tanzania to communicate their concerns on the matter to the government. However, at the time of this study, there was no feedback on the matter from the government ministries concerned.

5.4 Conclusion

From the data analysis presented in this chapter, South Africa has had a greater flow of RE projects than Tanzania. The RE-levels of investment in South Africa correspond to findings of Chapter 4 that FDIs correspond to credit ratings and more especially to strong credit ratings. As both the country as well as the utility enjoyed investment grade credit ratings during the REIPPPP bid windows, the private-sector investment levels in the RE-sector were also high. Even though Eskom’s, as well as the country’s ratings have deteriorated since the last bid windows, these prior commitments could still anchor a fertile base for the RE sector in the country. On the other hand, Tanzania has a relatively low level of RE-investment and neither the country nor the utility has a credit rating. However, they both exhibit negative risk profiles based on the data analysed in this chapter as well as the unsolicited negative risk perception emanating from their geographic location. Although Tanzania has a relatively high level of RE-resources, the country’s negative risk perception tends to mirror its low-levels of RE-investments.

5.4.1 Energy policy

Although South Africa has thus far set the target for RE-electricity supplied in the country's energy mix at 14% and RE-installed capacity at approximately 20% (from approximately 7%) by 2030, coal remains the dominant planned source of power for the same period. This makes sense as the majority of existing in-house power generation is coal-based, and it will take time to scale the capacity down. South Africa has thus indicated its commitment to RE-development not only through policies such as the power generation mix, but also through the domination of RE-based power generators in the existing IPPs composition.

Tanzania's policies indicate a plan to promote and increase the RE-generation capacity from approximately 37% to 40% by 2040, however, gas remains the dominant source of power supply in the planned energy mix. Tanzania has also shown evidence of a dominant non-RE based IPP composition, which implies that the interest of the increase in power generation will also be composed of non-RE based IPPs. However, based on the lack of progress in natural gas private-sector investments, as well as evidence to suggest misalignment with private-sector needs in the energy sector, the country is further reinforcing its prevailing negative risk perception towards private-sector energy project investments.

5.4.2 Credit worthiness of utilities

Eskom's credit ratings have rapidly deteriorated due to mismanagement, corruption, and increasing debt. The country has shown evidence of concern as well as interventions towards addressing the weakened risk perception of the utility by appointing a new board in efforts to turn around the worsening trend. The issuance and maintenance of credit rating also show that the utility is aware of its perceived risks and reflects intentions to uplift its deteriorating risk profile.

Although the utility's credit ratings deteriorated from 2008 and it has subsequently received government bail-outs, the country has managed to procure significant levels of RE-generation and as of the time of this study, the utility had not resorted to its sovereign guarantees to meet its financial obligations to RE-developers. The government, however, has shown no interest towards unbundling the vertically integrated utility in order to address the conflict of interest of power procurement from IPPs which has been evident from the delays in signing REIPPPP PPAs and increasing RE-investment negative risk perception.

TANESCO's credit-worthiness has remained perpetually weak due to numerous long-lasting arbitrations and weak balance sheets. This is partly attributed to the expensive contracts which were committed to in the previous political regimes which involved high levels of

corruption. Even though the utility does not have a credit rating globally, the issuance of a credit rating in its current capacity is likely to yield a sub-investment grade rating. The utility's credit worthiness has been further weakened due to its ongoing dependence on sovereign guarantees to service its debts. However, there is evidence that the government is attempting to address the severe debt crisis of TANESCO, through yet another debt (a loan from the World Bank). There is also evidence that the government plans to address the governance concerns especially through the announced intentions of restructuring/unbundling the utility. This would not only address the governance and management challenges of the utility and thus improve on the power sector's efficiencies and reputation, it would also address the conflict of interest with regard to purchasing power from IPPs, which would thus decrease the negative risk perception of RE-investments.

5.4.3 Funding

South Africa was able to raise more than 50% of debt and equity locally throughout the REIPPPP period. This shows the country's significant capacity for raising funding for RE-projects without awaiting foreign participation. On the other hand, Tanzania still depends on foreign capital towards raising debt and equity for IPPs (Eberhard *et. al*, 2017). This shows that Tanzania needs to take greater measures to facilitate private-sector investment. However, through assistance from SIDA and the World Bank, the government has initiated facilities to raise funding for small scale RE-investments. Given that the ability to unlock some of the funding requires a form of security on payments expected from the off-taker (TANESCO), some of the funding opportunities are likely to remain inaccessible as long as the perceived risk of the off-taker remains unresolved.

5.4.4 Power procurement

South Africa has benefited from a strong track record of transparency in RE-power procurement, related policies and frameworks as well as an enabling business environment. Even though the country has left investors unclear on the way forward with regard to the pending preferred RE-bidder PPAs, suffers from political instability, and has experienced downgrades, many other perceived risk factors are still well addressed in the country. If Eskom eventually signs off the PPAs, fresh calls under a new bid window under a clear Integrated Energy Plan geared towards RE could still attract numerous bidders through the REIPPPP irrespective of the existing, but short-term-viewed, downgrade in credit rating of both the country and the utility.

The autonomy of EWURA and the intentions to move to competitive bidding provide evidence of Tanzania's efforts towards promoting private-sector investments in RE.

However, the other overall uncertainties with weak credit-worthiness of the TANESCO undermine the progress made by EWURA towards promoting such investments.

5.4.5 Power purchase agreement

Whereas the PPA in South Africa is an effective risk mitigation mechanism, the effectiveness of a PPA is only justified through its enforced mechanisms. However, investors' perceptions of policy, decisions arising from policy and rule of law in South Africa have been shaken by the perpetual postponement of the sign-off on the Bid Window 4.5 preferred-bidder PPAs.

The recent review of the SPPA in Tanzania has revised clauses which has resulted in a decreased effectiveness in its risk mitigation mechanism. Furthermore, institutional strength would be required in order to enforce their effectiveness of which Tanzania has persistently demonstrated to be unable or unwilling to effect. Policy makers in Tanzania therefore need to pay close attention to institutional development because unresponsive government policies have been substantiated as significant to the deterrence of private-sector investment. Once again, this highlights the critical role of governments and government-institution's actors towards enforcing strategies on risk-mitigation measures in order to boost attractiveness to RE-investments in the two case-study countries.

Respondents from RE project developers in both case study countries expressed the view that the PPA is very effective as a tool for project implementation. However, they require continuity and policy framework that defines security packages or credit enhancement measures (such as government guarantees) that might be offered by a government (Eberhard and Gratwick, 2011).

5.4.6 Recent developments

Both South Africa and Tanzania currently suffer from unclear policy with respect to RE-project development on the large scale. South Africa has left many developers in uncertainty since Eskom's refusal to sign further PPAs and Tanzania has left many waiting for the way forward with regard to the competitive bidding policy as well as the intention of abandoning IPPs altogether in favour of the EPC + finance model.

Chapter 6: Alternative risk mitigation measures

6.1 Introduction

This chapter responds to sub-questions 3 and 4 which focus on how other interventions such as government guarantees feature in risk mitigation towards RE project developments and the extent to which tariffs and tariff premiums have been effective as mechanisms towards risk mitigation in South Africa and Tanzania. The chapter is structured in three sections as follows:

- Government guarantee policies in the case study countries.
- Alternative risk mitigation measures towards RE-developments in the case study countries.
- The relevance of RE tariffs as risk mitigation measures in the case study countries.

The data abstracted from interviews with private and public-sector participants with respect to the content of Chapter 6 are shown in Table 19 below.

Table 19 Presentation of Chapter 6 primary data

Chapter 6 Primary data					
Variables	**Region**	**Question**	**Respondent**	**Responses**	**Data abstracted**
Public sector responses	TZ	What challenges have you experienced towards RE-development?	B3	People requested sovereign guarantees, but the government is not issuing sovereign guarantees unless the developer company is government owned.	The government is no longer issuing government guarantees unless the developer company is a foreign-government-owned entity.
Public sector responses	TZ	What challenges have you experienced towards RE-development?	B4	We are seeing a situation where everyone coming wants a government guarantee. The issue is that government is expected to invest in each and every project. So, they are stretched and that's why the government is no longer issuing guarantees	The government has numerous commitments for infrastructure development and has to be selective about where and how it prioritises its government guarantees.
Private sector risk perception	TZ	What is the perception of Tanzania in terms of RE-project investments?	B1	There is perceived risk with the government not providing guarantees for its utility (off-taker). Which begs the question, if the Ministry of Finance is not willing to take off-taker risk from TANESCO, why should investors do so?	The state that is not providing a guarantee for its parastatal utility implies that the state itself views the utility as not credit worthy and therefore investors and developers will view it in a similar

					way.
Public sector responses	TZ	What about Partial Risk Guarantees?	B4	The partial risk guarantee is a facility that is signed between the government and the bank, so it is similar to a government guarantee.	The government is unwilling to establish partial risk guarantees.
Private sector risk perception	TZ	What are the alternative risk mitigation measures for RE-developments?	B1	An escrow account, however the utility might not be able to afford it as it would need to freeze funds. Another option for TANESCO to attempt to unlock the power project funding available from REA and TIB in order to provide a guarantee on itself.	Alternative risk mitigation methods which are described further in Section 6.3.
Private sector risk perception	SSA	Do tariffs have to be reflective of the country risk?	A2	Yes, a tariff must affect the country risk. They have to factor in yields, forms of guarantees received from governments, rates of banks willing to lend money etc.	Calculations towards proposed tariffs factor in perceived and existing risk as well as risk mitigating mechanisms in the country.
Public sector responses	TZ	How is TANESCO dealing with its debt crisis?	B4	It is good that TANESCO is saying that it cannot afford certain tariffs, for example, the take or buy system. That's one of the issues which created the competitive bidding system. Because of the bad experiences with capacity charges.	The policy moved to the competitive bidding system because of the challenges of bidders bidding prices higher than the end-user price of electricity.
Public	TZ	Is the competitive	B3	For above 10 MW, we have already prepared	Tanzania is still in the process of

sector responses		bidding system already functioning in Tanzania?		the bidding documents, we are waiting for the responsible Ministry to approve.	approving the policy towards the competitive bidding for large scale projects (those greater than 10 MW capacity).
Private sector risk perception	TZ	In a scenario like Tanzania with a FiT, would a high FiT attract investors?	B2	A high tariff would not make a difference. For a higher tariff, you will be in the money in terms of a higher returns, but it does not address the bankability returns, if the utility can't pay a lower tariff. There is also the risk of renegotiation of the PPA, if you come in at a high tariff. TANESCO could also attempt to unlock the power project funding available from REA and TIB essentially entail paying a percentage of the amount in order to provide a guarantee on itself.	Merely increasing a tariff or its premium does not address the issue of the credit-worthiness of the off-taker. If the off-taker has a bad history of paying debt at a lower tariff, then they will not be capable of paying debt at a higher tariff.
Private sector risk perception	SSA	Would addressing risk perceptions lower expected tariffs?	B2	If all the potential risks perceive by developers for the time of the investment are discussed and addressed, why not offer the same rate to SSA countries as developed countries? South Africa put these standards out and put a ceiling price and everyone came to the table, but this would probably not be the same case for other SSA countries.	Even if all the investor's risk concerns were addressed in an SSA country, the investor would still demand a higher internal rate of return (IRR) from the less developed SSA countries than from a more developed country.

6.2 Government guarantees

6.2.1 South Africa

Through the Public Finance Management Act of 1999, South Africa has publicised the terms and conditions of government guarantees. The act states that all government guarantees ascertaining to the National Revenue Fund must be authorised by the Minister of Finance and once such a guarantee is issued, the funds budgeted for the accountable department must be realigned to accommodate for the guarantee. The act also lists the public entities which are entitled to benefit from the issuance of government guarantees, of which, Eskom is one of them. South Africa offered government guarantees for all the projects under the REIPPPP and they are still valid in the existing contracts (Creamer, 2017). Even though the country's sovereign credit ratings have deteriorated, there is no evidence of the withdrawal of the government guarantees on the pending PPAs once they have been signed-off by Eskom.

6.2.2 Tanzania

Through the Government Loans, Guarantees and Grants (Amendment) Act, 2003, Tanzania has publicised the terms and conditions of government guarantees. The act states that government guarantees, must be authorised by the Minister of Finance only once it is concluded that they are in the interest of the public as well as approved by the National Debt Management Committee (NDMC). The guarantees are capped at a maximum of 70% of the amount borrowed unless in exceptional circumstances which have to be motivated through the NDMC and waivered by the Minister of Finance. The guarantees may only be issued to parastatal organizations which are also required to demonstrate that they have provided adequate securities to cover the loan in the event of default. The act however does not specifically list the parastatal organizations which are entitled to benefit from the issuance of a government guarantee.

Eberhard and Gratwick (2011) (as discussed in Section 2.4.3) and respondent A1 contend that RE-project developers seek guarantees on projects for risk mitigation. The publication of an act which guides government guarantees implies that the country is willing to share knowledge on guarantee expectations to potential investors and thus, taking initiatives towards mitigating negative risk perceptions by private-sector investors. Both South Africa and Tanzania have shown efforts towards mitigating risk in this respect. Although South Africa's credit ratings have deteriorated, government guarantees on PPAs underwritten during the bidding windows for RE-investments are still valid. On the contrary, Tanzania is no longer issuing government guarantees to private-sector developers on behalf of its

parastatals, and thus further weakening the risk mitigation measures towards RE-investments.

Respondent B3 and B4, from EWURA and the Ministry of Energy (MoE) respectively, stated that at some point, investors requested for government guarantees, but the government is no longer issuing such guarantees unless the developer company is a foreign-government-owned entity. This means that the government is not willing to give government guarantees to private-sector developers. A respondent added that a state that is not providing a guarantee for its parastatal utility implies that the state itself views the utility as not credit worthy and therefore investors and developers will view it in a similar way. On the contrary, respondent B4 from the MoE reasoned that the government has numerous commitments for infrastructure development and thus has to be very selective about where and how it prioritises its government guarantees. The government is specifically reluctant to provide government guarantees to power projects due to its bad experience with the IPTL of which it is still paying (Kapika and Eberhard, 2013).

6.3 Alternative risk mitigation measures

In order to mitigate risk perceptions, there are facilities which bridge the disjuncture between private sector needs and public-sector responses. In the case of RE-investments in South Africa, the investment grade government guarantees seemed to suffice for RE-developers as they did not seek further guarantees (Eberhard *et al.,* 2014). However, in the case of Tanzania, government guarantees are no longer being issued to private-sector developers and even if they were being issued, the country is not rated, and the country is still within a negative risk perception status. RE-developers would therefore have to seek for alternative security measures.

Due to the absence of government guarantees and lack of security on payments from the off-taker in a country like Tanzania, respondent B1 suggested that an escrow (see definition of terms - Section 1.9) account could provide a payment support mechanism for RE-developers. This could address the immediate problem of security on payments. Even though escrow accounts are feasible and available, they require to be serviced and they also accrue interest should the off-taker not meet its commitments. With an escrow account, the off-taker is obliged to replenish the accounts should they be depleted. Whereas, the charges of an escrow account could put a utility into further debt, it can be assumed that project developments would improve revenue flows. Furthermore, if the utility focuses on efficiency via revenue collection, the entity would have additional revenue to keep such accounts operational. However, the use of an escrow account also involves freezing large funds which

the utility might not afford as it might need the funds for other priority investments or operational expenses. Such a facility had been provided for IPTL in Tanzania only to be later discovered that the funds from the account had been illegally accessed by the Managing Director of IPTL without formal approval, and distributed to high profile political officials (Cooksey, 2017). The government is therefore reluctant to sustain such a mechanism.

Respondent B1 also suggested that TANESCO could attempt to unlock the power project funding available from REA and TIB (see Section 5.3.3). A certain amount from the funds can be put into an account which TANESCO would be responsible for and could be used towards Letter of Credit. This would essentially entail paying a percentage of the amount in order to provide a guarantee on itself. If effectively operated, the bank would gain profits from the interest and TANESCO would be able to guarantee for itself and thus ensure a better credit rating.

As an alternative measure, Partial Risk Guarantee (PRGs) are sought from multilateral development banks such as the African Development Bank (AfDB) and the World Bank. The host government seeks a PRG from the multilateral development banks in consultation with the private-sector developer in order to relieve the host government of providing direct guarantees. The disadvantage of PRGs is that they are still in effect a guarantee which the government has to provide, albeit instead of being directly liable to a developer, they become liable through the multilateral development bank. Respondent B4 from the MoE in Tanzania advised that the PRGs operate in a similar manner as government guarantees of which the government is now unwilling to provide.

Political risk can also be mitigated through political risk insurance (PRI) provided by public agencies such as Multilateral Investment Guarantee Agency (MIGA) to which both South Africa and Tanzania are members. Political risk insurance (PRI) promotes foreign direct investment by enhancing private-sector investor confidence in markets perceived to be riskier than the investor's home markets (MIGA, 2013). Political risk insurance covers an enterprise against the risk of losses related to political causes and allows the enterprise to focus on commercial aspects of investment as well as give comfort to lenders who require country risk mitigation before providing loans. This can improve access to financing including the amounts, interest, and tenors on loans. MIGA also provides dispute resolution services for guaranteed investments. In terms of RE-investments, the PRI would be taken out and be paid for by the RE-developer who would in turn integrate the cost and fees into their tariff-offer. So far, there is no energy project in South Africa or Tanzania which has made use of this facility.

Africa Trade Insurance (ATI) is a political risk insurance institution which provides investment and credit risk solutions for investors seeking to invest in ATI's member countries in Africa. Their Regional Liquidity Support Facility (RLSF) provides short-term liquidity support to service debts and operations for an IPP in the event that the off-taker does not pay on time (ATI, undated). Although this product takes a relatively long time to secure, it can provide RE-developers protection against renegotiation of tariffs and higher certainty on regular payments. Tanzania has shown initiative towards encouraging investment by becoming a member of the agency, although, so far there is no energy project in Tanzania which has made use of the facility.

6.4 The relevance of RE tariffs and tariff premiums towards risk mitigation.

6.4.1 South Africa

South Africa abandoned the REFIT program which used capped feed-in tariffs (FiTs) and moved to a competitive bidding system in 2011 (Eberhard and Kåberger, 2016). The competitive bidding process managed to consecutively reduce the price of purchased power from IPPs in South Africa through the numerous bid windows as shown in Table 20 with the examples of wind and solar PV.

Table 20 Tariff caps and average bid tariffs from REIPPPP bid windows (Note: Bid window 3.5 data were unavailable from the source) (Source: Eberhard and Naude, 2016)

	Onshore Wind		Solar PV	
Bid Window	**Tariff cap (ZAR)**	**Bid Tariff (ZAR)**	**Tariff cap (ZAR)**	**Bid Tariff (ZAR)**
1	1.15	1.14	2.85	2.76
2	1.15	0.9	2.85	1.65
3	1	0.74	1.4	0.99
4b	0.77	0.72	0.77	0.85

The process showed that developers were willing and able to bid under the price caps proposed by the REIPPPP in the request for proposals (RFP), even as the price caps were reduced. This implies that RE-developers had developed confidence in the REIPPPP as the bid windows progressed. With the security of investment grade government guarantees as well as a track record of concluding agreements, investor confidence improved, and this made the cost of borrowing cheaper. RE-developers were therefore continuously able to reduce bid tariffs. Inclusive of falling costs of RE-projects globally, this also shows that the tariffs were reduced due to reduced negative risk perception. Through competition, bidders proposed the lowest tariff that they could accommodate in order to complete the project, service their debts, and accrue profits. Respondent A2 advised that their calculations

towards their proposed tariffs factored in perceived and existing risk as well as risk mitigating mechanisms in the country. The risk perception therefore influences the tariff offered, but as mentioned in Section 2.3.2, offering higher tariffs in order to present attractive returns on investment does not necessarily affect the risk perception, which thus emphasises that tariff-levels and tariff premiums are not effective as risk mitigation mechanisms. On the contrary, risk mitigation is effective towards tariff reduction, especially through a competitive bidding procurement system.

The Africa Trade Insurance Regional Liquidity Support Facility (RSLF - see Section 6.3) has a checklist for factors to evaluate in order to determine whether an IPP is eligible for the facility's services (ATI, undated(b)). One of the key points on the checklist is whether the project returns are at attractive levels. The checklist states that the risk is higher in a country which has moved from feed-in tariffs to a competitive bidding system as tariffs are driven down to very low levels. Signing a PPA at very low tariffs leaves developers vulnerable to financial strains which could cause delays, lead to problems to the completion of the project, or constrain flexibility for critical changes in the project process. This can lead to disputes and strained relations with the off-takers and contractual obligations can be compromised. Eventually this can lead to numerous claims amongst parties and ultimately, this may entail going to arbitration. This emphasises on the critical significance of tariffs towards the overall financial viability risks of a project.

6.4.2 Tanzania

Most African countries use FiTs on a fixed rate basis without premiums (Eberhard *et al.*, 2017). The feed-in premium scheme is based on adding a negotiated premium to the fixed feed-in tariff (Eberhard *et al.* 2016 – as mentioned in Section 1.3). Tanzania mainly used direct negotiations for the procurement of power on a large scale (above 10 MW), with some project-proposals tendered with limited or no competition. Tariff and tariff premiums are the key factors towards calculating returns on investment which in turn influences the financial viability risk of the project. However, higher tariffs or tariff premiums do not mitigate the important risk of long-term security on payments for the RE-developer.

In 2008, EWURA adopted the small power purchase agreement (SPPA) for main grid and mini grid connected generators using the Standardized Tariff Methodology (STM). This was to be based on the avoided cost of power generation for TANESCO and was termed as the First Generation Small Power Producer (FGSPP) Framework (EWURA, 2017). It allowed for annual adjustments on tariffs based on the approved methodology of the framework. In 2015, the FGSPP was reviewed and led to the approval of the Second Generation SPP

(SGSPP) Framework in March 2016. The competitive bidding system was announced for power generation in wind and solar technologies or hybrid systems from 1 MW to 10 MW (*ibid.*). Small power producers using wind and solar technologies with generation capacity under 1 MW were still subject to the approved REFIT of a 500kW biomass project connected to the main grid with a 5% premium for those connected to the main grid and a 15% premium for those connected to an isolated mini-grid.

According to respondent B4 from the Ministry of Energy, the policy moved to the competitive bidding system because of the challenges of bidders bidding prices higher than the end-user price of electricity. All SPP's which had signed an SPPA with TANESCO based on the FGSPP opted to continue operating within the same framework, where FiTs were adjusted annually, whilst newer projects had to use the competitive bidding system. The FiTs for SPPs who opted to continue with the FGSPP framework based on avoided costs are shown in Table 21.

Table 21 Tariffs for main grid connection and off- grid SPPs based on the avoided cost. (Source: EWURA email response to questionnaire dated October 2017)

	Description		2012 Tariff (TZS/kWh)	2013 Tariff (TZS/kWh)	2014 Tariff (TZS/kWh)	2015 Tariff (TZS/kWh)	2016 Tariff (TZS/kWh)
Grid connected SPP	Standardized Power Purchase Tariff		152.54	174.89	197.31	190.94	190.46
	Seasonally adjusted Standardized SPPT	Dry Season	183.05	209.87	236.78	229.13	228.58
		Wet Season	137.29	157.4	177.58	171.85	171.42
Off-grid SPP	Standardized Power Purchase Tariff		480.50	490.5	482.64	490.39	477.16

From the analysis of the tariffs offered in Tanzania for grid connected SPPs based on the avoided cost method, one can note that initially there was an increase in tariffs and then a steady decrease from 2014. This possibly shows the realisation that increasing tariffs did not necessarily entice investors. This is substantiated by the significant increase in the letters of intent received by TANESCO from the year 2015 over the previous years (see Appendix J). It should be noted that tariffs vary from dry season to wet season as Tanzania is highly dependent on hydro-power and therefore the need for additional generation capacity is higher during the dry season. Off-grid tariffs are higher because they target areas not already connected to the national grid and the avoided cost inclusive of grid infrastructure is therefore greater. A respondent from EWURA stated that Tanzania is still under the process

of approving the policy towards the competitive bidding for large scale projects (those greater than 10 MW capacity).

According to respondent B2, merely increasing a tariff or its premium does not address the issue of the credit-worthiness of the off-taker. If the off-taker has a bad history of paying debt at a lower tariff, then they will not be capable of paying debt at a higher tariff. Therefore, if the credibility of the off-taker is weak, then the investor will most likely mitigate the risk through a measure such as a sovereign guarantee for security on the debt repayment. Tariff manipulation of prices should therefore not be relied upon by policy makers as a risk mitigative measure. However, the tariffs should be reflective of what the power utility can realistically pay and therefore should reflect sensitivity to retain solvency as well as offer investors reasonable returns on investment. A respondent from the Ministry of Energy stated that reasonable return on investment for the investor is factored into the standardized tariff methodology. Reasonable returns on investment however would be higher for a country which is perceived as high-risk environment for investments and this is how country-risk-perception (and hence credit rating agencies) can influence investor/developer expectations on tariff-levels.

If a country can provide sovereign guarantees, and the power utility eventually develops a reputation of debt repayment, ideally, the utility should be able to offer lower tariffs and still attract investors. However, this is often not the case for SSA countries, which therefore raises the issue on whether country risk profile and credit ratings are possibly used by developers/investors to negotiate for higher returns or tariffs. Based on this thought, respondent B2 expressed an opinion that even if all the investor's risk concerns were addressed in an SSA country, the investor would still demand a higher internal rate of return (IRR) from the less developed SSA countries than from a more developed country. A problem, however, lies in accessing adequate data on case studies towards substantiating on this view.

Already, TANESCO has a bad track record with regards to arrears, getting entangled in disputes followed by numerous, long-lasting arbitration cases. This record is further tainted by the fact that TANESCO has been embroiled in corruption and started off with fixed high tariff contracts which has driven the utility into severe debt and perpetual crisis. Multiple respondents did however acknowledge that of late, TANESCO has been developing a good track record of payments towards small power project developers/investors.

6.4.3 Expected return on investment

One of the factors that African Trade Insurance puts into consideration towards deciding whether it will insure an IPP is whether the project has attractive returns. In a high-risk rated nation, the internal rate of return (IRR) of an investment is expected to be higher in order to compensate the investor for taking on the high risk. Respondent A2 advised that a higher tariff would not entice them to invest in a country which has a high-risk profile. This further emphasises on the inadequacy of tariffs and tariff premiums as a risk mitigative measure while also emphasising on the significance of a country's risk profile and risk perception towards RE-investments in a country. Table 22 shows key respondent's feedback towards the expected IRR from investors in the SSA region.

Table 22 Expected IRR from respondents in RE project development

Respondent	South Africa (ZAR)	South Africa (USD)	East Africa (USD)	West Africa (USD)
Respondent A1	14 % - 17%	8-12%	15% -20% in	15% -20%
Respondent A2			11%-15%	
Respondent B1			18%-20%	

The table shows that South Africa, which is perceived as less risky than East and West African sub-region countries, generally enjoys a lower expectation for IRR from project investors and funders. This is due to its higher credit rating as mentioned in Chapters 4 and 5. Although tariffs are key towards projecting an attractive IRR, higher returns for investors can be achieved through subsidies such as tax exemptions. Applying a high tariff will not necessarily entice investors and thus a tariff does not necessarily have to be high in order to be explicitly responsive to a country's risk profile. Finding the balance of an affordable tariff for the off-taker and also providing a reasonable return on investment given the high-risk profile is what seems to be key towards promoting a host country's development intentions as well as fulfilling investors' requirements.

CRAs are relevant to RE projects because usually the off-taker is the state-owned power utility. Country risk is not only key to the investors, but is also key to the funders, who conduct their own analysis of the country and the proposed investment before committing to fund an investment. As discussed in Section 2.2, credit ratings provide an opinion of how likely it is that investors will be paid in full and on time (Taylor, 2017). A low-risk rating will mean that an investor can assume a stronger assurance of being paid on time, but in addition, the interest payments are likely to be moderated to lower levels. A high risk rated

rating carries a greater risk of default but would pay investors a greater interest to compensate them for taking on the higher risk.

Most investors are more willing to put their money into an investment with a lower guaranteed return than for larger, but unreliable returns (Taylor, 2017). South Africa has one of the best credit risk ratings in Africa. Although Tanzania does not as yet enjoy a credit risk rating from the reputable big three CRAs, from the data presented in Chapter 4, the country inevitably falls under the perceived high-risk region of SSA.

As discussed in Section 2.4, government institutions can also encourage private-sector investment by reducing governance risks, safeguarding regulatory frameworks which promote RE-investments and implementing plans for financial-institution development in order to boost their capacity to finance RE-investments. As one respondent from a political risk insurance agency advised, even though risk does and always will exist in the region, these risks are not unique to the region. The respondent posited that risk has been perceived as greater in the SSA region because there were no credible organs to support and provide guarantees such as those historically prevalent in Europe over a long period. As shown from the findings in Chapter 4, as well as feedback from the respondents, country risk perception and related credit ratings play a significant role on the intent to invest in a country as well as the ability to secure affordable financing.

6.5 Conclusion

From the data and the analysis presented in this Chapter, South Africa is still offering guarantees to RE-developers as is evident in the terms of the PPA, and the government is showing its commitment to such guarantees. As the guarantees were still being issued by the government even when Eskom enjoyed investment grade ratings, the guarantees are more important now that Eskom's credit-worthiness has deteriorated. Even though the signing of PPAs has been delayed by Eskom, there is no evidence to suggest that the government guarantees will be withdrawn should the PPAs be signed.

Tanzania, on the other hand, no longer provides government guarantees and thus leaves RE-developers without this option for security on debt repayment. However, other options on risk mitigative measures exist (such as political risk insurance). The interventions of third-party agencies, however, adds costs to the developments for either or both the developer as well as the off-taker/government. As partial risk guarantees afford a similar level of mitigating payment security risk to guarantees, they are currently non-existent with respect to Tanzania's RE-projects.

As substantiated in this Chapter, tariff and tariff premiums are the foundation for the projection of returns on investment and key to determining the viability and continuity of a project. Tariff levels can therefore be effective in terms of countering risk perception if they are well thought out and realistic in line with the off-takers balance sheet. A high and unrealistic tariff and premium would, however, not attract an investor who has done their due diligence and discovers that the off-taker is not credit worthy. Policy makers are more likely to view tariff premiums as a mechanism of countering risk perceptions but only to discover that their utility is incapable of servicing debts based on such tariff-levels.

As stated by a respondent from EWURA, a PPA can be effective as a risk mitigation tool if the risk is balanced amongst all parties. This emphasises that striking a balance of a tariff which is feasible to the off-taker and considerate enough for an investor to continuously service their debt as well as make a profit would lead to optimal transactions. This shows that EWURA have realised that their risk is not solely dependent on the tariff and tariff premiums and thus no longer assumes that risk can be overcome merely by raising tariffs and tariff premiums. In the case of a highly indebted utility, this can lead to defaulting on payments. Thus, EWURA have shown that it is making efforts towards addressing stakeholders' concerns on the effective risk mitigation measures of which tariff-levels are not necessarily the focal point.

South Africa has proven that tariffs are not highly effective as a risk mitigation measure based on the fact that the country was able to achieve amongst the lowest power purchasing tariffs in the world through their competitive bidding system. This was pursued through continuous consultation with stakeholders and external consultants towards addressing key concerns amongst the relevant parties. Although competitive bidding does raise risk by driving tariffs to very low-levels, it is assumed that developers and investors would offer bid tariffs based on their expected costs and also include contingencies in the case of any unexpected event. It is therefore assumed that the investor has the financial capability to follow through with their commitments and not bid a tariff price at which they would be financially unable to withstand some shock. Therefore, the bidder is expected to raise the required capital from funders and be financially capable of delivering their commitments if the off-taker remains diligent with payments. As argued by Eberhard and Naude (2016), South Africa's REIPPPP managed to exclude financially incapable bidders by imposing high bidding costs and penalties so that incapable developers get disqualified early rather than looping them in and risking escalation in disputes later.

Credit ratings and risk perceptions clearly have a great influence on tariff-level expectations of a country. The impact of a credit rating is not reflected through the expectation of high tariffs but rather through the expectation of higher returns from a country which has a perceived higher risk rating than a country with a perceived lower risk rating in a manner similar to interest rates on sovereign bonds as discussed in Section 4.4. Once again, this brings into question whether credit ratings actually reflect the developing country's risks or rather that the prevailing practises on country risk ratings could actually be serving as neo-colonial methods of political manipulation. As a result, credit rating agencies suffer a dubious image problem where they are viewed as neo-colonial institutions with hidden agendas, especially where their "opinions" are treated as fact and their ratings become imposed on nations keen on attracting FDI. The same ratings are also used to set higher tariff-level expectations which do not reflect fairness/equity with regard to the developing country's interests.

A tariff should therefore rather be realistic in terms of ensuring that the off-taker keeps afloat in order to reliably service its debts and continue with its operations. Although a country's tariff is a prevalent factor in the investors considerations, the country risk profile and perception, as well as the utilities risk profile are more critical in terms of influencing investors as they are seen as a measure of the country's long term economic and socio-political stability. It is therefore essential for a country to take efforts towards addressing financial, commercial, and political risk mitigative measures in order to make the business environment more conducive and provide investors with a stable and predictable environment in which they feel confident to invest. This is reflected in South Africa's higher credit rating as well as the ability to continuously attract declining tariffs through facilitating a business environment in which investors feel that their concerns are being heard and addressed. Through extra assurance, the developers in South Africa were able to reduce their expected risk and costs in order to offer more competitive tariffs in their bids.

As stated in the introduction chapter (see Section 1.1 to 1.3), whereas there is an abundance of resources in the region and access to capital is improving (from funding institutions and investors), and interest in the region has risen steadily, negative risk perceptions consistently undermine decision-making and implementation of investments in projects and businesses in the region. Equally, even though tariff and tariff premiums are important factors in computing the returns on investment, higher tariffs/premiums are not necessarily effective as mechanisms towards the mitigation of already high-risk perceptions. The negotiation and inclusion of risk mitigative measures can contribute to the same tariff becoming more profitable as well as increase debt-repayment certainty for both the off-taker

and the project-developer. Reducing risk for RE-investors is a more attractive alternative to increasing relative profitability. The study therefore finds that a tariff or premium could enable an investor to consider investing in a country based on the IRR, but the risk would still need to be mitigated through other measures, and especially through clear policy, regular and consistent debt repayment security, and stability relating to change of policies. The study thus concludes that credit rating influences risk perception, which in turn influences the tariff levels.

Chapter 7: Conclusions and consolidation of overall findings

7.1 Introduction

The study has substantiated on the risk perceptions of SSA countries and the case study countries of South Africa and Tanzania in particular. The study has also addressed the level of RE-investments in the case study countries as well as analysed the effectiveness of existing risk mitigation measures towards RE-investments in the respective case study countries. This chapter summarizes the findings from the study and responds to the study's sub-questions as well as consolidating the study's finding in order to respond to the main research question. The chapter is structured into eight sections including this introduction. The following five sections are assigned to responding to each of the sub-questions and the main research question. The next section consolidates the themes of literature review with the findings of the study and the last section covers the recommendations.

7.2 Status quo risk perceptions

To a large extent, risk perception is subjective in nature (Sjöberg, 2000). Country risk therefore entails a subjective interpretation of data/facts as well as related flows of information on the country in comparison to other countries (De Moor *et al.*, 2018). As a result, private-sector investor's perception of country risk is highly influenced by ratings from the big three credit rating agencies. While bearing such subjectivity in mind, the study substantiates on the negative bias towards risk perceptions of the SSA region (Asiedu, 2001) and the extent to which related credit ratings influence the investors' and lenders' risk perceptions towards the region as well as its respective countries individually. This is substantiated through the data presented and analysed in Chapter 4. The analysis in Section 4.3 shows increasing FDI-flows in the various countries of the region after attaining a credit rating. Data in Section 4.4 shows that SSA countries mostly issue sovereign bonds only after being issued a credit rating. Arising from the weak credit ratings of the region's countries (see Table 1), the region suffers from an overall negative risk perception. Although Tanzania does not have a credit rating, it has a negative risk profile by virtue of its location (Asiedu, 2001). South Africa on the other hand, has enjoyed investment-grade credit ratings until recently.

Although there are examples to substantiate on the negative risk perception and ratings in the SSA countries, decisions for the weak ratings could be influenced by the respective countries geographical location or biased opinions rather than arising from thorough

investigations into the variables that inform the determination of a credit rating as argued in Sections 2.2 and 2.3. The credit rating agencies themselves source most of their information from external sources (Luitel *et*. *al.,* 2016), which also need to be critiqued as their sources may be unreliable and the rating agencies explicitly state that they do not necessarily conduct due diligence on their external information sources (S&P, 2017).

Whereas SSA countries are pressured to get credit ratings in order to access international capital markets, especially through launching sovereign bonds, partly due to their geographical location, but mostly due to not heeding the ratings' criteria, their credit ratings end up being sub-investment grade. The countries therefore incur costs in order to get a rating which will most likely rate them as high risk, which in turn still leads to high costs of borrowing. In this regard, credit rating agencies are accused of promoting a neo-colonial agenda both in the process of charging fees to a country which may not necessarily heed the criteria for an investment grade rating, and in the process of seeking to covertly influence their cost of borrowing by assessing the dynamics of a country based on a one-sided and narrow interpretation of investment-grade criteria.

This inappropriate power-relation creates an opportunity for the CRAs to impose western policy agendas and directives in order to further their own interests, and thus indirectly "govern" sovereign countries through hidden manipulations. The manner in which a credit rating increases the cost of borrowing and the expected return on investments further consolidates the agenda of the western world to continue to lend to the low rated, developing countries at high interest which the developed countries would not be charged on a loan and which developing countries struggle to afford, and thus serving the interest of continuously keeping the developing countries in debt to the western world (Ioannou, 2016).

South Africa has enjoyed investment grade ratings for numerous years, which shows that it has enjoyed a positive risk perception. The influence of the investment grade rating is evident in the country's relatively high level of FDI (see Figure 8). As argued in the study, the country has also shown through policy responses, that it is more sensitive to private-sector investors' needs as well as being more aligned to the CRAs assessment criteria. By maintaining an investment grade rating, the country has exhibited that it provides investors with security on investment through predictable, positive and enforceable policies. Through incurring the ongoing fees of maintaining a credit rating, the country has also shown acknowledgement of the necessity of a rating towards attracting private-sector investments.

Tanzania's lack of interest in a rating implies that it possibly does not see the benefits of being issued such a rating, especially given the fact that it was able to issue a sovereign

bond, with similarly high interest rates to rated countries in the region, without itself having a rating (see Table 7). This is also possibly due to the fact that the country's FDI trend is similar to that of its rated neighbours (see Figure 9). The lack of a rating could also imply that the country does not want to adhere to the imposing influence of the credit rating criteria on its governance and policies. Through the recent abrupt and adverse policy changes made by the government, the country has provided further evidence of its unwillingness towards alignment with governance and policy measures which mitigate negative risk perception as expected by the CRAs for an investment-grade rating. Through delays in concluding negotiations with CRAs towards a rating, and its geographical location in the SSA region perceived as risky, Tanzania continues with a high-risk perception in relation to private-sector investments. Through the evidence provided regarding decisions and actions taken by the country, it is questionable whether the country is intent on attracting FDI from west-based investors or whether it prefers raising funding from other regions of the world which might not impose apparently manipulative criteria.

7.3 Existing levels of private sector RE-investments

Through the creation of the REIPPPP as well as the energy policies in South Africa, the country has shown efforts towards promoting RE-investments in the country (Eberhard and Naude, 2016). The fact that the majority of South Africa's IPPs are RE-based (see Table 15 also demonstrates the country's endeavours to promote RE. Even though Eskom's credit rating has been deteriorating due to mismanagement, corruption and increasing debt, as of the time of this study, the utility had not resorted to its sovereign guarantees to meet its financial obligations to RE-developers. Instead, it has relied more on government bailout through additional equity injection as was the case in 2015 when it received a ZAR 23 billion (approximately USD 2 billion) bailout (Bonorchis and Burkhardt, 2017). The country has also shown evidence of concern towards addressing the weakening risk perception of the utility by appointing a new board in efforts to turn around its worsening trend. The issuance and maintenance of a credit rating also shows that the utility is aware of its perceived risks and intends to uplift its deteriorating risk profile.

South Africa experienced the highest flow of RE-investments on the continent through the REIPPPP. However, a key contributing factor to the success of the REIPPPP was the investment grade credit ratings that South Africa as well as its utility Eskom, enjoyed before they both suffered downgrades to sub-investment grade. However, as discussed in Section 0, since 2015, the REIPPPP reached a stage of uncertainty especially arising from Eskom's refusal to sign the PPAs thus initiating a process which has resulted to enforcing a non-negotiable price for the preferred bidders' tariff (Creamer, 2017). South Africa has thus

started to exhibited weaknesses in addressing the issues of investor confidence by not fulfilling obligations in its commitments to preferred bidders. Whereas the government did make numerous attempts to ensure that Eskom signs the outstanding PPAs, the latest announcement on signing the PPAs with ceiling tariffs has also undermined investor confidence. Coupled with the deteriorated ratings of Eskom and the country, this could make investors demand higher returns on possible subsequent bid windows.

Although South Africa is still ranked at investment grade by one of the big three credit rating agencies, the country's risk perception has deteriorated leading to downgrades over the past few years mainly due to political instability and the weak balance sheets of the state-owned enterprises (National Treasury, 2017). The country does however benefit from a strong history of successful investments accompanied by diligent policy frameworks and an independent judiciary. As a result, the country still attracts investor appetite despite the political uncertainties and the fact that it has left RE-investors on stand-by for over 3 years. The government has also shown no sign towards the unbundling of the vertically integrated utility in efforts to address the conflict of interest of power procurement from IPPs which has been evident from the delays in signing REIPPPP PPAs. Respondent from RE-developers, however, stated that they are still most likely to participate if another bidding window is announced, depending on the finalisation of the currently pending energy mix framework under the updated IRP 2017.

As discussed in Section 5.3.2, TANESCO's credit-worthiness has been weak due to numerous long-lasting arbitrations, evidence of corruption, and perpetually weak balance sheet. This is partly attributed to previous commitments to expensive contracts which also entailed corruption. Even though the utility does not have a credit rating globally, the issuance of a credit rating in its current capacity would lead to a sub-investment grade rating. Its credit-worthiness has been further weakened due to its dependence on sovereign guarantees to service its debts. However, there is evidence that the government is attempting to address the severe debt of TANESCO through a loan from the World Bank (Ng'wanakilala, 2017b). Section 5.3.2 also presents evidence that the government plans to address the governance concerns through intentions of unbundling the utility. This would not only address the governance and management of the utility in pursuit of improving the power sector efficiencies and reputation, it would also address the conflict of interest with regard to purchasing electricity from IPPs, which would in turn decrease the negative risk perception of RE-investors (Eberhard and Gratwick, 2011).

Although the levels of recent RE-investments in Tanzania are much lower than those of South Africa, especially due to the country's low total generation capacity and high historical dependence on hydroelectricity, a significant part of the energy mix is projected to remain RE-based. As argued in Section 5.3, through the energy mix envisaged in policy frameworks, scaling generation capacity, as well as the need to promote off-grid power generation due to the inadequate grid infrastructure in the country, the country has shown its commitment towards RE-development. The primary focus of the generation capacity scaling plan is however clearly biased towards gas-powered generation. This would imply that there are great efforts towards facilitating private-sector investments in developing gas exploration and gas-powered projects. However, in spite of numerous delays and passing of adverse policies, it is clear that the policy responses are not matching the private-sector investors' needs towards existing investment opportunities in both the natural gas and RE sub-sectors. This implies that terms for RE-investments would not be as favourable to private-sector investors as well.

As the parastatal vested with the responsibility of procuring new electricity generation capacity/projects, EWURA has shown efforts towards addressing private sector concerns through numerous consultations. However, the risk perception of the utility, as well as the reluctance of the government to issue guarantees, still stand as concerns to investors. Tanzania has also made great efforts to combat corruption and political instability which has been an outcome of drastic changes in the governing regime. In efforts to drive the industrialization agenda, the country has also taken strong measures towards revenue collection in the form of outstanding tax debts from the private sector.

As stated by a respondent, this abrupt and strict revenue collection order has led to the shutdown of numerous businesses and the scaling down of many activities in the private sector. With regards to risk perception, numerous actions such as change of law and sudden strict policy enforcement is negatively impacting investor risk perception thus leading to the pessimistic view that no meaningful mitigative measures are currently underway. The country is therefore facing criticism that short-term thinking and ensuing policies only reinforce investor sentiments that the government is anti-business. Investors who have invested in the country are scaling down activities as they closely observe what happens next within a highly unpredictable environment whilst investors who have not yet invested in the country keep their wait on policy decisions and the resultant outcomes of them before committing to investing in the country.

7.4 Risk mitigation towards RE project developments

As presented in Section 6.2.1, South Africa has a publicised guarantee policy which explicitly indicates entities which qualify for a government guarantee. The policy also states the terms of the guarantees and defines how they are authorised so that an investor seeking such a guarantee can know what to expect. In line with the guidelines, South Africa is still offering guarantees to RE-developers as part of the terms of the PPA. As the guarantees were still being issued by the government even when Eskom was still ranked as investment grade (see Figure 14 and Figure 15), the guarantees are more important now that Eskom's credit-worthiness has deteriorated.

With respect to risk in RE-investments, South Africa has had the advantage of government guarantees with investment grade credit rating which gave investors enough confidence to not require further risk mitigation interventions. As other risk mitigation measures often have a cost or fee to service, this also made the cost of projects cheaper for the developers as well as the off-taker, Eskom.

As presented in Section 6.2.2, Tanzania also has a publicised guarantee policy which states the terms of the guarantees as well as defining how they are authorised so that an investor seeking a guarantee can know what to expect. In Tanzania, government guarantees as a risk mitigative measure are only valid for foreign state-owned developers investing in the country. The guarantees are therefore close to being non-existent in RE-project investments as most of such projects are solicited/pursued by private sector developers.

As presented in Section 6.3, Tanzania has a membership to credit-risk mitigation facilities such as risk insurance agencies. However, mitigating risk through such third parties adds costs to the projects for the developer as well as the off-taker/government. Since interventions such as partial risk guarantees afford similar mitigation effects to sovereign guarantees, they would be inaccessible with respect to Tanzania's RE-projects pursued by private-sector developers.

7.5 Tariffs and tariff premiums as risk mitigation mechanisms

Tariff premiums were found not to be significantly effective as risk mitigation mechanisms, especially because they do not address the major risk concerns of private-sector investors. Whereas such premiums can make the financial viability of a project attractive with regards to the expected return on investment, they do not override the need for assurance of being paid over the long-term horizon, on time, and in full. Offering a high tariff with weak credit worthiness would therefore not significantly improve investor-confidence while the overall

risk outlook remains negative. In such a situation, investors would be more inclined towards other forms of security on returns and payments in case the utility is not able to pay on time as discussed in the previous section.

As discussed in 5.2.2, another risk of high tariffs comes with the potential breach of contract in the form of renegotiation which can lead to disputes, arbitration, and even further delays in payments (Kapika and Eberhard, 2013). Ultimately this can lead to halting of operations and possibly the renegotiation of terms with lenders and investors in the project. With weak dispute resolution terms such as the disallowance for international arbitration, this further weakens the effectiveness of a tariff premium as a risk mitigation mechanism.

EWURA have shown efforts to move to competitive bidding guided by an avoided-cost tariff basis in order to address developer concerns of not being able to recoup their costs in time. This shows a form of effort towards addressing investors' concerns. As presented in Section 6.4.2, it is also interesting to note that the level of letters of interest from RE-developers increased significantly a year after EWURA began decreasing the SPPA tariffs. This implies that high-level tariffs do not necessarily mitigate investor risks or necessarily attract investors. Furthermore, the high-level tariff premiums do not address the constraints to FDI, nor the political risks substantiated in Chapter 4. High-level tariffs are therefore not effective towards addressing the prevailing negative risk perceptions in the SSA region, and specifically for the case study countries, with Tanzania as the most demonstrative compared to South Africa.

Besides the efforts of the REIPPPP, it is clear that the main contributing factor to the continuous reduction of bid tariffs through the bidding windows was the country's, as well as Eskom's investment grade credit rating. Once again, this substantiates on the influence of credit ratings on the level of RE-investments in a country (Asiedu, 2001). If the credit rating is higher, the expected return on investments would be lower, and thus the bid tariffs offered would also be lower. This substantiates that the risk mitigation measures towards addressing the determinants of a credit rating are more effective compared to a superficial manipulation of tariff levels in order to boost private-sector RE-development investments (Schwerhoff and Sy, 2017).

7.6 Addressing high-risk profiles with regard to attracting private-sector investment in RE development and operation

As the study has substantiated, credit ratings from the CRAs influence risk perceptions as well as risk profiles of the countries in the SSA region. It is clear that the issuance of credit

ratings, whether in investment grade or not, is a pre-requisite towards attracting private-sector investment. This is because it allows investors to have a benchmark indicator for the level of risks on their possible investment. By being rated, a country gives investors the perception that a country is willing to engage with private-sector investors and possibly start implementing the necessary risk mitigation measures in order to boost investments. In addition, the country also demonstrates that it is willing to disclose information about itself to the public through the credit rating agencies, and thus also implying a move towards transparency in line with private-sector investor expectations.

The rating also allows an investor the comfort of ongoing monitoring of potential risks in a country. Through the rating surveillance fees charged to the SSA countries, CRAs periodically update ratings in order to advise potential or existing investors on the anticipated potential risks or gains on investments. Investors can monitor these ratings remotely and use them to make decisions in order to minimise losses or gain further profits. By approaching a credit rating agency, negotiating, and paying the CRA fees, as well as being issued and maintaining a credit rating, an SSA country would be demonstrating that it is aware of its risk perception, has acknowledged the significance of a credit rating and thus, is attempting to address its high-risk profile towards attracting private-sector investment and consequently RE-investment. The word ‘attempt’ is used as maintaining a credit rating can only constitute the first step towards addressing the high-risk profiles in a more systematic manner.

Even though various SSA countries have attempted to address their high-risk profiles by being rated as reported in this study, they have mostly remained rated at sub-investment grade. Being issued a credit rating however conforms to the expectations of private-sector investors on demonstrating awareness of the perceived level of risk of the specific country. Further on, from being issued a credit rating, the countries would be expected to align public sector policies with the private sector needs as per the criteria used by the CRAs. This would primarily mean addressing the political risks substantiated in this report, which thus constitute the next step towards mitigating the high-risk profiles.

The key measures towards such mitigation strategies would include the following. The countries must firstly not resort to ad-hoc policy changes without consultation. The process of policy change should be well thought out and inclusive of relevant stakeholders before being enacted. Even if the policy changes are not to the favour of investors, by including the relevant stakeholders in the deliberations prior to policy changes, certain considerations to the investors’ concerns could be addressed indirectly before enacting the policy change.

Consultation with the relevant stakeholders would also limit the shock of abrupt change and hence provide a sense of predictability, which mitigates risk for investors.

The countries need to develop a track record of honouring contracts as well as financial obligations. This however, is easier said than done. To avoid disputes and breaches of the contract, the countries need to firstly ensure that they are entering contracts in which the terms are considered to be fair or equitable. This can only be achieved through a fair balance of risk. It should be noted however, that it is difficult for the developing countries to negotiate fair terms as well as balance the risks due to the private-sector investors ability to use weak ratings and inadequate funds to manipulate the terms of agreement. This implies unequal power relations which then forces SSA countries to abstain being involved in the ratings.

Besides simply revising policy responses to meet the needs of private-sector investors, SSA countries need to also ensure as well as develop a track record of policy continuity and policy enforcement. Even if policy terms do not meet the full requirements of private-sector investors, they may still decide to invest if assured of policy continuity. Once again, this prescribes predictability, which mitigates on shocks and thus offers investors some level of security on their investments. An example of this is a policy which guarantees investors the transfer and repatriation of funds, in line with shareholder/investor priorities. However, the host country needs to ensure that the policies come with terms which do not undermine the country's socio-economic or political interests.

Although the public sector in the SSA countries acknowledge the need for private-sector participation towards their socio-economic development mandates, they often do not offer convincing risk mitigative measures for private-sector investment. This mismatch is deemed to be the key influencing factor on the low-levels of private-sector investment, as well as the expectation of high returns on such investments even though developing countries are less capable of affording such returns compared to developed countries. This in turn leads to defaults, credit rating downgrades and higher costs of borrowing to service previous debts.

This induces the vicious cycle of debt which the developing world is perpetually entrapped into. In addition, the western world values more positively, countries where international dispute resolution clauses exist as they seek opportunity for impartial judgement on, very often, intentionally exploitational contractual terms which the developing countries desperately agree to without adequately factoring in the reality of the consequences of default. In the case of Tanzania which has restricted international arbitration, this measure could be perceived as a counter measure to resist and mitigate neo-colonialism. However,

from the private-sector investors' point of view, this inevitably escalates negative risk perception.

Highly indebted developing countries like Tanzania are therefore being expected to pay high tariffs for private-sector power generation investments which they cannot afford, and they systematically decline. However, they do not consistently engage with western world investors towards negotiating lower tariffs. It therefore raises doubts as to whether the countries are keen to encourage west-based private-sector investment in their countries, or possibly they merely wish to benefit from grants and aid as opposed to allowing private-sector investors to enter their markets. There is the possibility that developing countries are willing to allow private-sector investors to benefit, but they are being cautious towards western world investment due to past experiences of exploitation through perpetual indebtedness.

Arising from the finding of this study, the tariffs and tariff premiums are not as effective as credit ratings in terms of risk mitigation for private-sector investments. While raising tariff premiums may make a project look more attractive financially, the project can be abandoned if the country and its respective utility's risk perception is weak. However, due to the expected higher rate of return in the high-risk environment, the tariffs offered may still have to be higher even with risk mitigation measures. Since South Africa is well rated in the region and Tanzania has no rating, the lower tariff rates in South Africa as compared to Tanzania reflect the country's relatively lower risk perception. The varying levels of tariffs in the region are therefore likely to be reflective of risk profiles of the countries as well as their utilities even though in themselves they cannot serve the more fundamental pre-requisite of securing payments on long-term investment such as in RE-projects.

7.7 Consolidation of findings and linking to theoretical themes of the study

The objective of study was to understand how countries in the SSA region are responding to private-sector negative risk perception in order to promote RE-investments. This section serves to respond to the working hypothesis as well as consolidate the report's findings with the relevant theoretical themes from literature review (see Chapter 2).

The data and findings in this study substantiate on the sub-questions, but also predominately support the working hypothesis (see Section 1.8) that the prevailing scenario of the relatively low levels of private sector RE-investments in the SSA region, amidst an environment of low electrification rates, high RE potential and inadequate public-sector funding, is primarily due

to the perceived high-risk profile of the region and its countries as well as inadequate responses to private sector investors' perceptions of the high-risk profile.

Smale (2016) argues that the big three CRAs (Moody's, S&P and Fitch Ratings), dominate the credit rating market globally. Therefore, the ratings from these CRAs were used throughout the report to emphasise Ioannou's (2016) argument that the weak and sometimes-subjective ratings from agencies are influential towards private-sector investor's negative risk perceptions of the SSA region. Cantor and Parker (1996), however, argue that CRAs provide private-sector investors with insights on sub-investment rated countries which is not publicly available, and thus highlight private-sector investor dependence on ratings from the CRAs. This theory aligns with data presented in Section 4.3 which shows the increase in FDI after being assigned a rating from the big three CRAs. On the other hand, Cai *et al.* (2016) argue that regions with weak credit ratings attract relatively lower levels of FDI, whilst Asiedu (2001) points out that the countries in the SSA region receive less FDI due weak credit ratings of the region's countries. This also aligns with the data presented in Section 4.3 which displays that the FDI in the high risk rated SSA region is relatively less than that of other regions.

Williams *et al*. (2015) argue that private-sector investor perceived risk and uncertainty of returns contribute to higher loan interest rates. Data (presented in Section 4.4) of weak rated SSA countries attaining high interest rates on sovereign bonds issued aligns with the argument made in the study. Through data on the higher expected returns on investment (presented in Section 6.4.3) yet low levels of FDI (as presented in Section 4.3) in the SSA region, Asiedu's (2001) argument that higher interests do not have a significant effect on FDI, which is assumed to be proportional to risk perception, is validated. Schwerhoff and Sy (2017) further emphasise this point by suggesting that higher tariff premiums will not necessarily increase RE-investments in the region, and this is substantiated with data presented in Section 6.4. This suggests that other risk mitigating measures are required to improve on private-sector investor's risk perceptions as increase FDI-levels. Asamoah *et al*.'s (2016) argument, that developing countries public-sector policy responses and continuity towards private-sector investor needs are seen as weak, is further substantiated through the analysis of South Africa and Tanzania's investment policies (as presented in Section 4.6.1 and 4.6.2 respectively) and energy policies (as presented in Section 5.3.1 and 5.4.1). The data presented in these sections further agrees with Schwerhoff and Sy's (2017) argument that RE-investments are deterred by ad-hoc regulatory changes and political instability.

As presented in Section 5.3.6, Tanzania has made efforts towards promoting power procurement through IPPs (and consequentially RE-developments) by proposing the unbundling of the utility, as suggested by Eberhard and Gratwick (2011). Eberhard *et al.* (2016), however argue that Tanzania seems to be reluctant towards IPPs due to previous negative experiences which led to bad debt as highlighted in Section 5.4.2. South Africa, on the other hand, has made efforts towards promoting RE-developments through the development of explicit policies, governance and institutional arrangements (as suggested by Eberhard and Gratwick (2011) and Eberhard and Kåberger (2016)), through the REIPPPP, as presented in Section 5.3.2. Eberhard and Gratwick's (2011) emphasis on the importance of risk mitigation measures such as guarantees are highlighted by the presence of such measures in South Africa and the lack thereof in Tanzania, which is reflective of their respective levels of RE-investments. Data presented in this report substantiates on the theories above with respect to the influencers and enhancers of the status quo private-sector investor's negative risk perceptions as well as the low levels of FDI and RE-investments in the SSA region.

Through data presented and discussions in Chapter 4, the status quo negative risk perception of private sector investors towards SSA countries is linked to the weak sovereign ratings, the low levels of FDI and the public-sector policy responses towards private sector investor needs. As presented in Chapter 5, the lower levels of RE-investment in Tanzania are reflective of the weak investment and energy policy responses to private sector investor requirements as compared to the higher levels of RE-investments in line with the stronger responses to private sector investor requirements existing in South Africa. As presented in Chapter 6, the relatively higher expected rates of return, higher tariffs, as well as the presence (or lack) of existing risk mitigation interventions in Tanzania as compared to those existing in South Africa, are assumed to contribute to the negative risk perceptions. The study finds that although the relatively high RE resources scenario in the SSA region seems to be suitable for RE-investments to overcome the relatively lower electrification rates, the private sectors' negative risk perceptions facilitate the lower levels of RE-investments in the region. The countries in the region therefore need to take action towards addressing the negative risk perception in order to improve on RE-investment levels.

7.8 Recommendations

Towards the end of the time of this study, Tanzania was issued a sub-investment grade credit rating by Moody's. This study therefore recommends ongoing monitoring towards an assessment on whether the issuance of the credit rating would lead to higher levels of FDI,

lower interest rates on sovereign bonds, and further alignment of governance and policy requirements in line with CRAs criteria.

Although the study has substantiated on various factors which influence credit rating, a key factor of concern is that low economic indicators in SSA are themselves possibly a consequence of the low electrification rates. With low electrification rates which throttle economic development thus leading to high-risk credit ratings and high tariffs, it raises the question as to whether private-sector investors (especially in the RE-sector) take consideration of this relationship when factoring in the ratings from the CRAs. It has also been implied in the study that weak credit ratings are used by investors/lenders/developers in the SSA markets towards negotiating higher returns regardless of a track record of on-time payments. The study therefore recommends further studies to substantiate on this view.

The study also seems to suggest that SSA countries are reluctant to be rated by CRAs due to the perceived neo-colonial agenda of the CRAs. However, it also needs to be systematically understood that adhering to risk mitigative measures administered by CRAs, to a large extent, involves transparency and subsequently higher-levels of governance in a country. In order to restrict abrupt policy changes and unpredictable governance, some level of autonomy amongst civil-service technocrats needs to be adhered to once clear policy guidelines have been set. This principle suggests that SSA governments could also possibly be avoiding ratings in order to avoid empowering technocrats and general public participation in a manner which exercises checks and balances on the political regime.

African countries have committed to increased levels of transparency and accountability through platforms such as AU declarations and the recently signed Free Trade Zone. However, there is hardly any evidence to suggest that the countries are executing measures in pursuit/fulfilment of these commitments. As CRAs deem transparency and accountability as favourable characteristics towards investment grade ratings, SSA countries are expected to be rated positively if they were to fulfil their commitments as per the various political-economic platforms. However, as SSA countries are not fulfilling such commitments, while at the same time continuing to avoid seeking a rating, it raises the question as to whether the perception of CRAs as mechanisms for neo-colonial control are used by SSA political regimes as a method of deflecting attention from their strategy of maintaining authoritarian control on their respective countries and people. The findings therefore suggest a need for further studies to substantiate on this paradox.

The suggested study would firstly entail substantiating on the extent to which SSA countries are following-up on commitments to increase transparency through evidence of actions

taken by the respective governments. This would be followed by exploring whether SSA governments have taken steps to increase efficiency and autonomy in decision-making guided by clear and systematic policy frameworks rather than through political decrees.

The study suggests that SSA countries are reluctant to be issued a credit rating due to perceived risk of a neo-colonial agenda. This finding therefore suggests further studies on how the SSA countries could otherwise unlock private-sector participation towards RE-investments. This would be a question of whether a balance can be struck such that the CRAs do not impose governance and policy preferences on the SSA countries or, how the countries can consistently attract private-sector participation in the RE-market without having to subject their governance and political choices to manipulative ratings by the CRAs.

Based on the findings of study, in order for SSA countries to increase the low-levels of RE-investments, the respective governments need to address the negative risk perception of their countries and the region as a whole amongst private-sector-investors. If the governments opt to avoid mitigating the perceived risks through ratings by the CRAs, they should do so by effectively addressing transparency and institutional efficiency as internal governance imperatives. In these times of easily accessible online information, the implementation of such measures and evidence of a track record to that effect would most likely become apparent and be easily accessible to potential private-sector investors without the prevailing private-sector over-dependence on mediation through CRAs' ratings.

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Appendices

Appendix A – Interview guide questions

Table 23 Interview guide questions

Interview guide for Tanzania Investment Centre (Tanzania) and Department of Trade and Industry (South Africa) – Category 1	Which government institution is responsible for tracking and responding to the country's risk profile? If there is an institute responsible for monitoring the negative risk perception, what are they doing about it and who disseminates and manages the counter measures? Are the required staff and skills available to disseminate and manage the counter measures? Is there an information centre to cover general investor queries with regard to risk-perception? What are the country's experiences on policies to attract private-sector investments in renewable energy projects in the midst of high-risk-perception/profile? What interventions are currently being used by the government in order to promote private-sector investment in renewable energy in the country?
Interview guide for renewable energy financier or investor (Tanzania and South Africa) - Category 2	What are the key factors which influence your risk perception of investing in the country and how (rule of law, right to property, country risk profile, financial sector)? What kind of return on investment relative to risk profile do investors expect? Is risk-perception factored into the appraisal process for RE project funding? What are the previous experiences of private-sector investors and developers in RE projects in the country? What are the risk profile mitigation interventions necessary to motivate private-sector investors to invest in RE projects in the country?
Interview guide for Ministry of Energy (Tanzania) and	Who sets the tariffs (or ceiling price) for RE power projects and how are the tariffs set? Are the RE industry stake-holders consulted during the process of deriving tariffs?

Department of Energy (South Africa) - Category 3	Are the tariffs (or ceiling price) derived with consideration of the country risk profile? Are the projected returns on the investment for investors considered when deriving the tariff and if so, how is it factored into the process? What government interventions are currently being used to promote investment in renewable energy projects and to what extent does the risk-profile influence the nature or alternatives of such interventions?
Interview guide for Energy Water and Utilities Regulatory Authority (Tanzania) and National Energy Regulator South Africa (South Africa) - Category 4	What are the prevailing tariffs for RE power projects? What is the process for (PPA) appraisal and approval? What is the relationship between risk-perception (and risk-profile) and the Power Purchase Agreement (PPA)? To what extent is a PPA meaningful/effective risk-perception mitigation tool? What guarantee do investors have that power utilities will not jeopardise the financial closure of a project?
Interview guide for Tanzania Electricity Supply Company (Tanzania) and Eskom (South Africa) - Category 5	How is the cost of power production (kWh) calculated? What is the appraisal process for approving a PPA? What motivations are put in place to encourage RE project implementation? What are the limitations/reservations of the power utility for financially closing a RE project? How can Independent Power Producers (IPP) be guaranteed payment from the PPAs? What are the implications of a breach of contract for the IPP and the power utility?

Appendix B - Ethics clearance form

SCHOOL OF ARCHITECTURE AND PLANNING
HUMAN RESERCH ETHICS COMMITTEE

CLEARANCE CERTIFICATE
PROTOCOL NUMBER: SOAP086/07/2017

PROJECT TITLE:	Country risk perceptions and responses towards private sector investments in renewable energy (ERE) in sub-Saharan African countries: A comparative study of Tanzania and South Africa
INVESTIGATOR/S:	Benedict Ndunguru (Student no #0508888k)
SCHOOL:	Architecture and Planning
DEGREE PROGRAMME:	Master of Architecture (SEEC)
DATE CONSIDERED:	11 August 2017
EXPIRY DATE:	11 August 2018

DECISION OF THE COMMITTEE: APPROVED

CHAIRPERSON _____
(Professor Daniel Irurah)

DATE: 14 - 08 - 2017

cc: Supervisor/s: Daniel Irurah

DECLARATION OF INVESTIGATORS

I/We fully understand the conditions under which I am/we are authorized to carry out the abovementioned research and I/we guarantee to endure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I/we undertake to resubmit the protocol to the Committee.

Signature BENdunguru **Date** 17/08/2017

Appendix C - Solar radiation levels in SSA

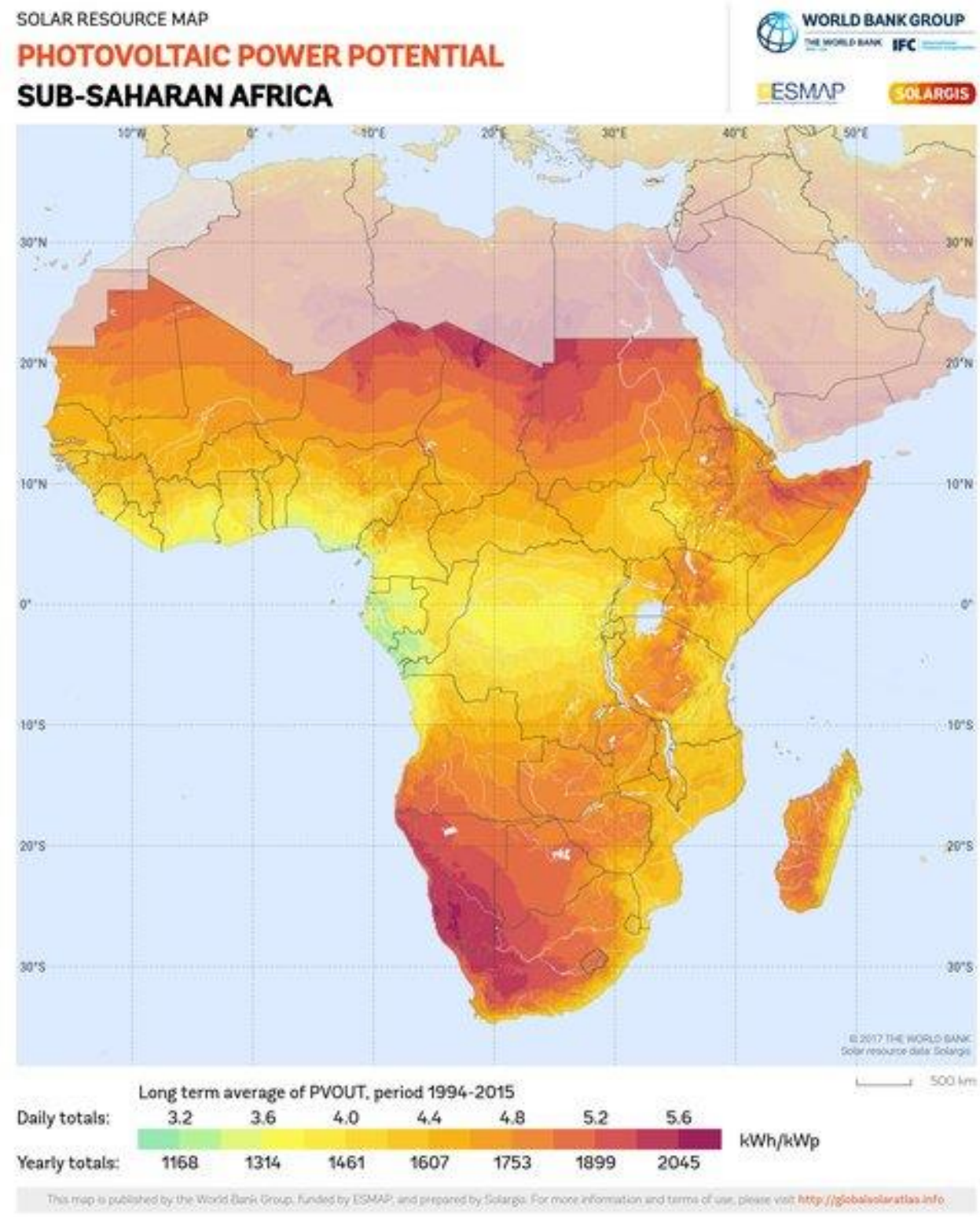

Figure 18 Solar radiation levels in SSA (Source: SolarGIS, 2018)

Appendix D - Wind speed levels in SSA

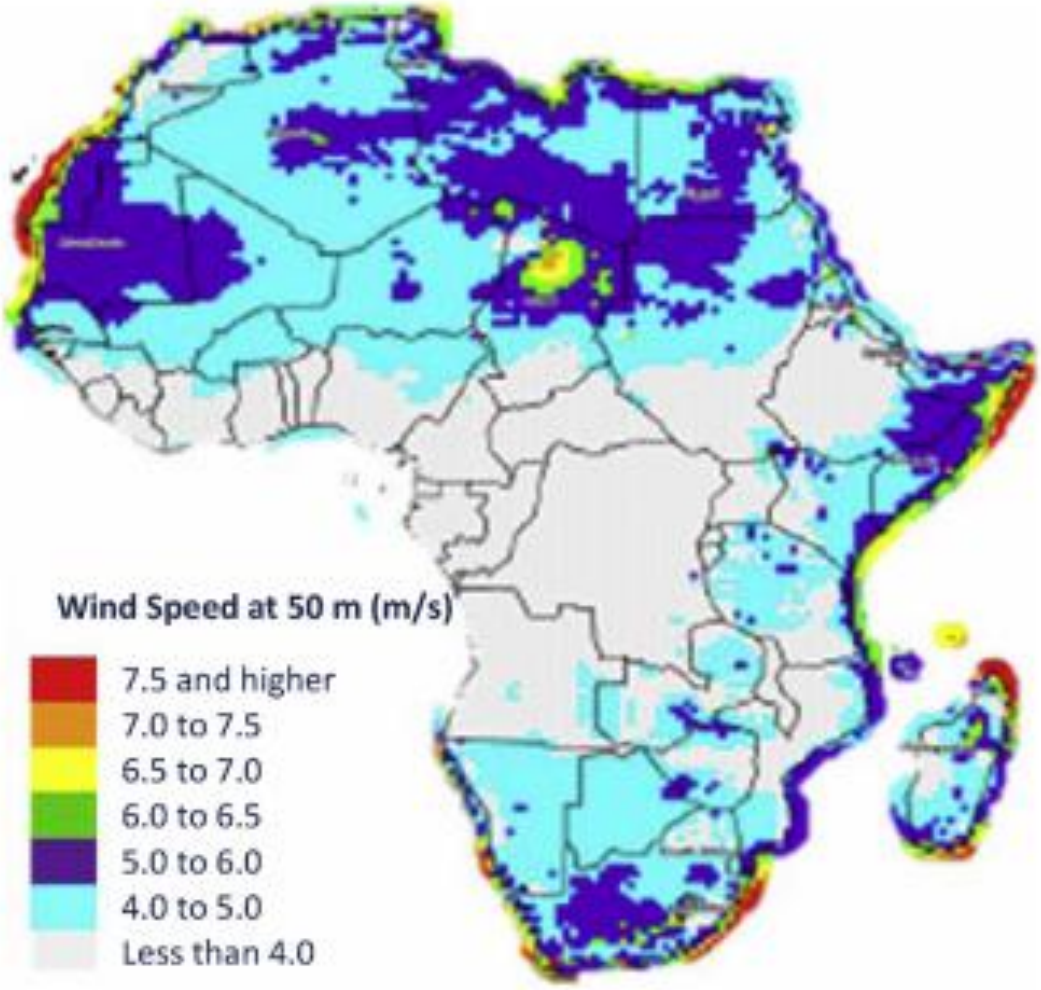

Figure 19 Wind speeds at an altitude of 50m in Africa (Source: Mukasa, 2013)

Appendix E - Electrification rates of SSA vs other world regions

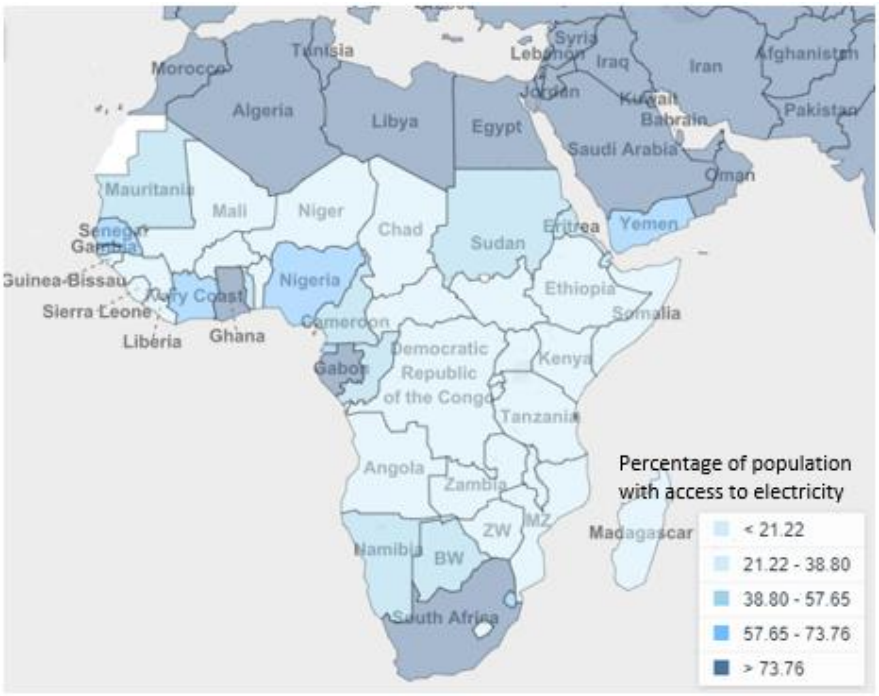

Figure 20 Electrification rate in sub-Saharan Africa (Source: World Bank Group, 2018b)

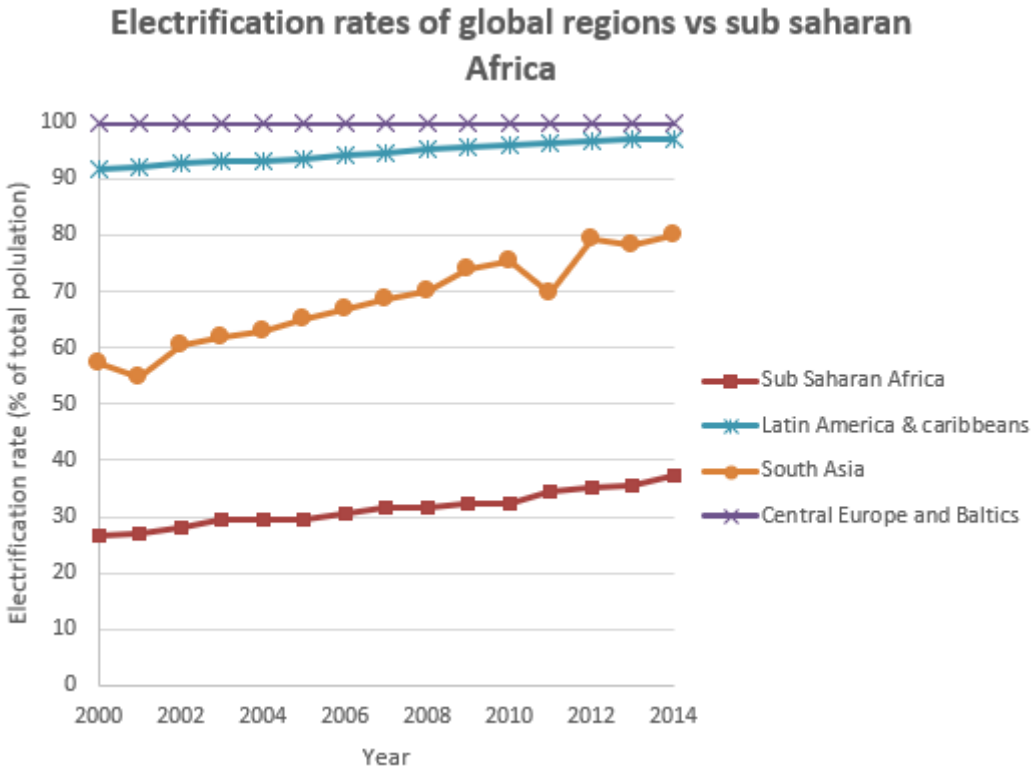

Figure 21 Electrification rate in sub-Saharan Africa vs other regions (Source: World Bank Group, 2018b)

Appendix F - Small-scale hydro-power potential in SSA

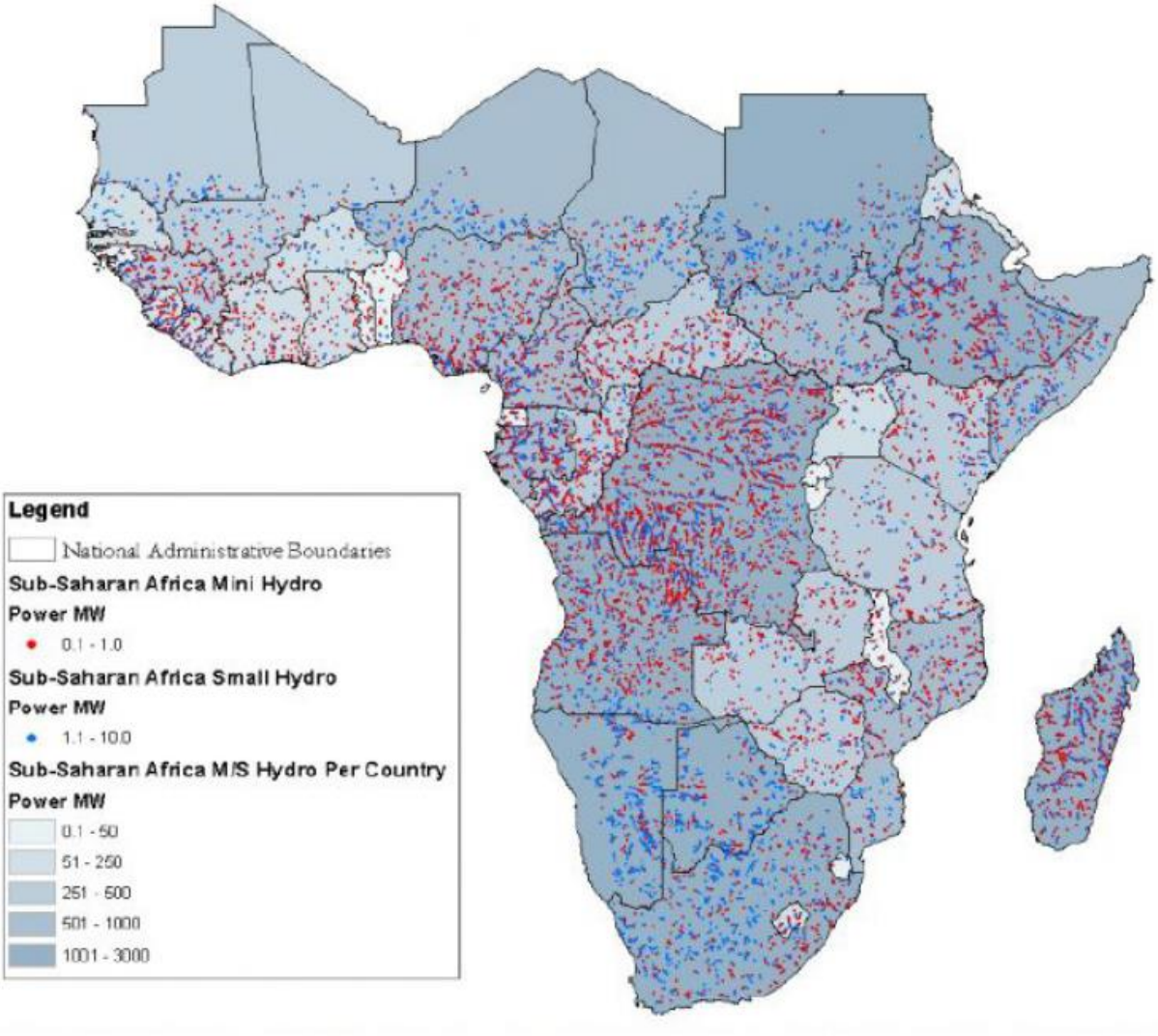

Figure 22 Small-scale hydropower potential in SSA (Source: Korkovelos, 2017)

Appendix G – Credit risk agency ratings

Table 24 Credit risk rating agencies rankings (Source: Trading economics, 2018)

<table>
<tr><th colspan="2">Moody's</th><th colspan="2">S&P</th><th colspan="2">Fitch</th><th colspan="2" rowspan="2">Rating description</th></tr>
<tr><th>Long-term</th><th>Short-term</th><th>Long-term</th><th>Short-term</th><th>Long-term</th><th>Short-term</th></tr>
<tr><td>Aaa</td><td rowspan="5">P-1</td><td>AAA</td><td rowspan="3">A-1+</td><td>AAA</td><td rowspan="3">F1+</td><td>Prime</td><td rowspan="9">Investment-grade</td></tr>
<tr><td>Aa1</td><td>AA+</td><td>AA+</td><td rowspan="3">High grade</td></tr>
<tr><td>Aa2</td><td>AA</td><td>AA</td></tr>
<tr><td>Aa3</td><td>AA−</td><td>AA−</td></tr>
<tr><td>A1</td><td>A+</td><td rowspan="2">A-1</td><td>A+</td><td rowspan="2">F1</td><td rowspan="3">Upper medium grade</td></tr>
<tr><td>A2</td><td>A</td><td>A</td></tr>
<tr><td>A3</td><td rowspan="2">P-2</td><td>A−</td><td rowspan="2">A-2</td><td>A−</td><td rowspan="2">F2</td></tr>
<tr><td>Baa1</td><td>BBB+</td><td>BBB+</td><td rowspan="3">Lower medium grade</td></tr>
<tr><td>Baa2</td><td rowspan="2">P-3</td><td>BBB</td><td rowspan="2">A-3</td><td>BBB</td><td rowspan="2">F3</td></tr>
<tr><td>Baa3</td><td>BBB−</td><td>BBB−</td></tr>
<tr><td>Ba1</td><td rowspan="14">Not prime</td><td>BB+</td><td rowspan="6">B</td><td>BB+</td><td rowspan="6">B</td><td>Non-investment grade</td><td rowspan="14">Non-investment grade
AKA high-yield bonds
AKA junk bonds</td></tr>
<tr><td>Ba2</td><td>BB</td><td>BB</td><td>speculative</td></tr>
<tr><td>Ba3</td><td>BB−</td><td>BB−</td><td></td></tr>
<tr><td>B1</td><td>B+</td><td>B+</td><td rowspan="3">Highly speculative</td></tr>
<tr><td>B2</td><td>B</td><td>B</td></tr>
<tr><td>B3</td><td>B−</td><td>B−</td></tr>
<tr><td>Caa1</td><td>CCC+</td><td rowspan="5">C</td><td rowspan="5">CCC</td><td rowspan="5">C</td><td>Substantial risks</td></tr>
<tr><td>Caa2</td><td>CCC</td><td>Extremely speculative</td></tr>
<tr><td>Caa3</td><td>CCC−</td><td>Default imminent with little</td></tr>
<tr><td rowspan="2">Ca</td><td>CC</td><td>prospect for recovery</td></tr>
<tr><td>C</td><td></td></tr>
<tr><td>C</td><td rowspan="3">D</td><td rowspan="3">/</td><td>DDD</td><td rowspan="3">/</td><td rowspan="3">In default</td></tr>
<tr><td rowspan="2">/</td><td>DD</td></tr>
<tr><td>D</td></tr>
</table>

Appendix H – Operational RE IPPs in South Africa as at December 2017

Table 25 South Africa operation IPPs from REIPPPP (Source: IPP projects, 2017)

SN	BW	Project Name	Technology	Capacity (MW)
1	1	Aries Solar Energy Facility	Photovoltaic Crystalline Fixed	9.65
2	1	Cookhouse Wind Farm	Onshore Wind	135.8
3	1	Dassieklip Wind Energy Facility	Onshore Wind	27
4	1	Dorper Wind Farm	Onshore Wind	97.53
5	1	Greefspan PV Power Plant	Photovoltaic Crystalline-Single Axis	9.9
6	1	Herbert PV Power Plant	Photovoltaic Crystalline-Single Axis	19.9
7	1	Hopefield Wind Farm	Onshore Wind	65.4
8	1	Jeffreys Bay	Onshore Wind	135.11
9	1	Kalkbult	Photovoltaic Crystalline Fixed	72.4
10	1	Kathu Solar Plant	Photovoltaic Crystalline-Single Axis	75
11	1	Kaxu Solar One	Concentrated Solar Power with storage (min 3 hrs per day)	100
12	1	Khi Solar One	Concentrated Solar Power with storage (min 3 hrs per day)	50
13	1	Konkoonsies Solar Energy Facility	Photovoltaic Crystalline Fixed	9.65
14	1	Kouga Red Cap Wind Farm - Oyster Bay	Onshore Wind	77.7
15	1	Lesedi Solar Photovoltaic Park	Photovoltaic Crystalline Fixed	64
16	1	Letsatsi Solar Photovoltaic Park	Photovoltaic Crystalline Fixed	64
17	1	Metrowind Van Stadens Wind Farm	Onshore Wind	27
18	1	Mulilo Solar PV De Aar	Photovoltaic Crystalline Fixed	10
19	1	Mulilo Solar PV Prieska	Photovoltaic Crystalline Fixed	19.12
20	1	Nobelsfontein Phase 1	Onshore Wind	73.8
21	1	RustMo1 Solar Farm	Photovoltaic Crystalline Fixed	6.93
22	1	Slimsun Swartland Solar Park	Photovoltaic Crystalline Fixed	5
23	1	Solar Capital De Aar	Photovoltaic Thin Film Fixed	75
24	1	South African Mainstream Renewable Power De Aar PV RF (Pty) Ltd	Photovoltaic Crystalline Fixed	45.6
25	1	South African Mainstream Renewable Power Droogfontein (RF)	Photovoltaic Crystalline Fixed	45.4

		(Pty) Ltd		
26	1	Soutpan Solar Park	Photovoltaic Crystalline-Single Axis	27.94
27	1	Touwsrivier Solar Park	Photovoltaic Crystalline- Dual Axis	36
28	1	Witkop Solar Park	Photovoltaic Crystalline-Single Axis	29.68
29	2	Amakhala Wind Project	Onshore Wind	131.05
30	2	Aurora-Rietvlei Solar Power	Photovoltaic Crystalline Fixed	8.9
31	2	Bokpoort CSP project	Concentrated Solar Power with storage (min 3 hrs per day)	50
32	2	Boshoff Solar Park	Photovoltaic Crystalline-Single Axis	57
33	2	Chaba Wind Power	Onshore Wind	21
34	2	Dreunberg	Photovoltaic Crystalline-Single Axis	69.6
35	2	Gouda Wind Project	Onshore Wind	135.5
36	2	Grassridge Onshore Wind Project	Onshore Wind	59.8
37	2	Jasper Power Company	Photovoltaic Crystalline Fixed	75
38	2	Linde	Photovoltaic Crystalline-Single Axis	36.8
39	2	Neusberg Hydro Electrical Project	Small Hydro	10
40	2	Sishen Solar Facility	Photovoltaic Crystalline-Single Axis	74
41	2	Solar Capital De Aar 3	Photovoltaic Thin Film Fixed	75
42	2	Stortemelk Power Plant	Small Hydro	4.22
43	2	Tsitsikamma Community Wind Farm	Onshore Wind	93.68
44	2	Upington Airport	Photovoltaic Thin Film Fixed	8.9
45	2	Vredendal Solar Park	Photovoltaic Crystalline Fixed	8.8
46	2	Waainek Wind Power	Onshore Wind	23.28
47	2	Wind Farm West Coast 1	Onshore Wind	90.82
48	3	Adams Solar PV 2	Photovoltaic Crystalline Fixed	75
49	3	Electra Capital (Pty) Ltd	Photovoltaic Crystalline Fixed	75
50	3	Joburg Landfill Gas to Electricity	Landfill Gas	5.28
51	3	Mulilo Prieska PV	Photovoltaic Crystalline-Single Axis	75
52	3	Mulilo Sonnedix Prieska	Photovoltaic Crystalline Fixed	75
53	3	Nojoli Wind Farm	Onshore Wind	86.6
54	3	Noupoort	Onshore Wind	79.05
55	3	Pulida Solar Park	Photovoltaic Thin Film Fixed	75
56	3	Red Cap - Gibson Bay	Onshore Wind	108.25
57	3	TOM BURKE SOLAR	Photovoltaic Thin Film Fixed	60

Appendix I - Status of small power producer RE IPPs in Tanzania as of June 2017.

Table 26 Status of SPP IPPs (Source: Tsakhara, 2017)

Status of Small power producer IPPs						
	SPP Name	**Technology**	**Capacity (MW)**	**On/off grid**	**SPPA Signed on**	**Commercial operation date (COD)**
1	TANWAT	Biomass	1.5	Grid connected	17.09.2009	15.06.2010
2	TPC	Biomass	17	Grid connected	06.10.2009	13.09.2010
3	Mwenga	Hydro	4	Grid connected	19.01.2010	21.09.2012
4	Ngombeni	Biomass	1.4	Off Grid	19.01.2010	11.02.2014
5	Andoya	Hydro	0.5	Off Grid	25.02.2013	19.03.2015
6	Tulila	Hydro	5	Off Grid	11.01.2013	14.09.2015
7	Yovi hydro	Hydro	1	Grid connected	08.06.2015	10.11.2015
8	Darakuta	Hydro	0.24	Grid connected	16.11.2013	19.04.2016
9	Matembwe Village	Hydro	0.5	Grid connected	13.09.2016	15.11.2016
10	NextGen Solawazi	Solar	5	Off Grid	16.01.2013	Expired on 15.04.2017
11	EA Power Ltd	Hydro	10	Grid connected	25.02.2013	Not yet known
12	Mapembasi	Hydro	10	Grid connected	15.01.2014	Not yet known
13	Maguta power project	Hydro	1.2	Grid connected	30.12.2015	Expected by Dec 2017
14	Luswisi project - Ileje	Hydro	4.7	Grid connected	30.12.2015	Not yet known
15	Ilungu ward project	Hydro	5	Grid connected	30.12.2015	Not yet known
		Total	**67.04**			

Appendix J – SPPs projects with letters of intent in Tanzania as of June 2017

Table 27 RE-developers who have issued letters of intention to TANESCO (Source: Tsakhara, 2017)

Projects with Letters of Intent (LOI)						
SN	**SPP name**	**Technol.**	**MAX Cap. (MW)**	**Location**	**LOI date**	**Status**
1	Lyamanji project - Makete	Hydro	2.3	Off Grid	16.09.2014	Submitted draft feasibility study
2	Lwega project - Katavi	Hydro	5	Off Grid	25.09.2014	Submitted draft feasibility study
3	Nakatuta project - Songea	Hydro	10	Grid connec.	15.01.2015	Submitted draft SPPA
4	Lugarawa project - Ludewa	Hydro	1.7	Grid connec.	20.02.2015	construction started and COD expected by end of 2017
5	Kitewaka project - Ludewa	Hydro	4.2	Grid connec.	24.02.2015	Submitted pre-feasibility study
6	Isigula project - Njombe	Hydro	0.4	Grid connec.	05.10.2015	Submitted draft feasibility report
7	Pinyinyi project - Loliondo	Hydro	2	Off Grid	06.10.2015	Submitted draft feasibility report
8	Ngombezi project - Korogwe	Hydro	1.8	Grid connec.	02.12.2015	Feasibility study in progress
9	Biomass project - Korogwe	Biomass	0.5	Grid connec.	02.12.2015	Feasibility study in progress
10	Ijangala project - Makete	Hydro	0.36	Grid connec.	01.02.2016	Submitted draft feasibility study
11	Ninga project - Njombe	Hydro	6	Grid connec.	01.02.2016	Submitted draft feasibility study
12	Ibaga project - Makete	Hydro	1	Grid connec.	01.02.2016	Submitted draft feasibility study
13	Njelela project - Ludewa	Hydro	3	Grid connec.	01.02.2016	Submitted draft feasibility study
14	Lipupuma project - Songea	Hydro	6.8	Grid connec.	01.04.2016	Feasibility study in progress
15	Lipilipili project - Mbinga	Hydro	4.5	Grid connec.	01.04.2016	Feasibility study in progress
16	TANWAT project - Njombe	Biomass	6	Grid connec.	13.05.2016	Feasibility study in progress
17	Lupali project - Njombe	Hydro	0.32	Grid connec.	08.07.2016	Feasibility study in progress
18	Diwale project - Mvomero	Hydro	3.4	Grid connec.	10.08.2016	Feasibility study in progress

19	Luponde project - Njombe	Hydro	2.9	Grid connec.	10.08.2016	Feasibility study in progress
20	Suma project - Tukuyu	Hydro	1.5	Grid connec.	10.08.2016	Feasibility study in progress
21	Kikuletwa I project - Hai	Hydro	1.6	Grid connec.	01.09.2016	Submitted draft feasibility study
22	Mpanda project - Mpanda	Solar PV	0.95	Off Grid	30.08.2016	Submitted draft feasibility study
23	Kikuletwa II project - Hai	Hydro	8	Grid connec.	20.10.2016	Submitted draft feasibility study
24	Malolo project - Kilosa	Solar PV	0.95	Grid connec.	04.11.2016	Feasibility study in progress
25	Kagera Sugar project	Biomass	10	Grid connec.	13.01.2017	Feasibility study in progress
26	Shinyanga project	Solar PV	1	Grid connec.	20.01.2017	Feasibility study in progress
27	Sumbawanga project	Solar PV	1	Off Grid	20.01.2017	Feasibility study in progress
	Total capacity		**87.2**			