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I hereby declare that I have read and understood the regulations governing the submission of Master of Law dissertations, including those relating to length and plagiarism, as contained in the rules of this University, and that this dissertation conforms to those regulations.

Signed:

Date 15 February 2013

ABSTRACT

Climate change necessitates a shift from South Africa's current fixation on coal fuelled energy to renewable energy. The private sector will play a pivotal role in making this shift. It is argued that there is a legal obligation to invest renewable energy. Such investment must take place within the existing regulatory and policy framework; however this framework is itself a barrier to private sector participation. Finance is the second barrier. An appropriate legal structure and entity must be used to raise the required funding but a variety of funding options exist. This paper examines the above barriers to private sector participation and proposes ways in which to overcome them

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KEY TERMS

Carbon credits; Climate bonds; Carbon finance; Climate change; debt finance; Electricity Regulation Act; Electricity Regulations on New Generation Capacity; Electricity; renewable energy; Independent power producer; Project finance; REFIT; REIPPPP; Securitisation;

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For I know the plans I have for you,” declares the Lord, “plans to prosper you and not to harm you, plans to give you hope and a future.

Jeremiah 29:11

To God to whom I owe everything, thank You. To my family for the love and support; to Tracy Gutuza for the guidance, thank you all sincerely.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

Revolution: an overthrow or repudiation and the thorough replacement of an established government or political system by the people governed.¹ In Sociology, revolution refers to a radical and pervasive change in society and the social structure, especially one made suddenly and often accompanied by violence.²

The transition from the apartheid regime to a free and democratic state certainly was not sudden; the first definition of revolution is therefore better suited. Hiroshima is one way to describe the old system: blatant disregard for human life and devastating destruction that has lasted and will last for generations. The transition brought about a new order, the rainbow nation, characterized by a respect for human dignity, equality and freedom – in law, the challenge remain in transforming society.

Now, not too long after the last, South Africa needs another revolution, a sudden one. The energy landscape of this country needs radical and pervasive change. If this does not happen now then the consequences will be felt for generations to come. There are positive signs in legislation and policy but what is needed is action. If violence is what is needed to spark it, then where is the Mohammed Bouazizi of the renewable energy revolution?

What we have is a crisis: South Africa is the highest CO₂ emitter in Africa.³ 90 per cent of the country's electricity comes from coal -⁴ a depletable fossil fuel, the most polluting energy source on the planet,⁵ extracted from the underground primarily to produce energy and incidentally contributing to the global phenomenon that is climate change. What we need, the solution, is a

¹ Dictionary.com com 'Revolution definition'. Last accessed from <http://dictionary.reference.com/browse/revolution?s=t> on 3 February 2013.

² Ibid

³ US Energy Information Administration 'International Energy Statistics'. Last accessed from <http://www.eia.gov/cfapps/ipdbproject/IEDIndex3.cfm?tid=90&pid=44&aid=8> on 4 February 2013.

⁴ Department of Energy 'Basic Electricity Overview'. Last accessed from http://www.energy.gov.za/files/electricity_frame.html on 3 December 2012.

⁵ Green Peace 'Coal'. Last accessed from <http://www.greenpeace.org/usa/en/campaigns/global-warming-and-energy/coal/> on 14 January 2013.

renewable energy revolution. Everyone must be involved in changing the energy landscape of South Africa: the government, public and private entities, individuals and communities must all join forces to transform South Africa to a country with sustainable energy generation.

Below, renewable energy is defined, a general description of climate change is given, and the paper then presents the argument that there is a legal obligation to invest in renewable energy. This is done in order to contextualize renewable energy investment, to create an understanding of the need to invest in renewable energy, and to form the basis for the issues discussed in this paper which, in summary, are ways in which to overcome the financial and regulatory barriers to renewable energy generation. An overview, the objective, and the scope, of the paper will then be given.

1.2 What is renewable energy?

The White Paper on the Renewable Energy (2003),⁶ a foundational policy document aimed at promoting renewable energy development in South Africa, does not define renewable energy per se. However it defines renewable energy sources as ‘sun, wind, biomass, water (hydro), waves, tides, ocean current, geothermal, and any other natural phenomena which are cyclical and non-depletable.’ From this definition, one can infer that renewable energy is energy derived from a natural, cyclical and non-depletable resource. Fossil fuels are neither cyclical nor naturally replenishable. A further distinction between fossil fuels and renewable energy sources is that the latter has a reduced environmental footprint.⁷

1.3 Climate change

The need to invest in renewable energy in South Africa is twofold: on the one hand there is a need to satisfy the country’s large appetite for electricity – which has resulted in, what is commonly referred to as, an energy crisis; on the other hand there is a need to mitigate the risk of catastrophic climate change – which has the potential to impact upon human life, health and the environment. Below, the risk of catastrophic climate change is described.

(i) General

⁶ *White Paper on Renewable Energy* (GN 513 in GG 26169 of 14 May 2004).

⁷ National Academic Press ‘Environmental Impacts of Renewable Energy Generation’. Last accessed from http://www.nap.edu/openbook.php?record_id=12987&page=89 on 3 February 2013.

Climate change is a long-term shift in the weather conditions of a specific area between two different periods of time.⁸ The earth's climate changes naturally and for a long time a balance was kept:⁹ the earth's temperature and the concentration of greenhouse gases in the atmosphere were perfect for the survival of humans, animals and plants.

Today we are having problems keeping this balance. Human activity, especially the burning of fossil fuels, is releasing unsustainable quantities of carbon dioxide ('CO₂') into the atmosphere.¹⁰ The higher concentration of CO₂ and other greenhouse gases is trapping more heat energy in the atmosphere through the greenhouse effect.¹¹ As a result, temperatures on the earth are rising at a rate that has never been experienced in human history.¹² Unless change happens now, that is, unless there is widespread adoption of renewable energy and other climate friendly practices, we will experience the catastrophic effects of climate change, and so will future generations:

'Some of the likely impacts of catastrophic climate change include sea level rise, a greater risk of extreme weather events (heat waves, droughts and floods), increased risk of species extinction and biodiversity loss, increased spread of disease, changes in agricultural yields and the displacement of people forced to compete for increasingly scarce resources. It is the poorest countries of the world that will be most vulnerable to these impacts, and the African continent is on the frontline of climate change.'¹³

(ii) *Climate change facts*¹⁴

1. An estimated 300 million people were affected by climate-related extreme events and disasters in 2010.

⁸ The Great Warming 'Facts about Climate Change'. Last accessed from <http://www.thegreatwarming.com/pdf/ClimateChangeFactSheet.pdf> on 2 December 2012.

⁹ Ibid.

¹⁰ Ibid.

¹¹ The greenhouse effect: Human activity is causing the temperature on the earth to increase at abnormal rates as a result of which we are experiencing the harmful effects of climate change. The greenhouse effect explains this abnormal temperature rise. The greenhouse effect is a natural system that regulates temperature on earth. Greenhouse gases (GHG's) in the earth's atmosphere, trap the sun's heat near the earth's surface (just as glass in a greenhouse keeps heat in). Some of this heat energy is reflected back to space; most of this remitted energy is absorbed by the GHG's and clouds which then re-radiate the energy in all directions, some back towards the earth and some to space. This natural process is the greenhouse effect.

¹² The Great Warming op cit note 8.

¹³ Green Peace 'True Cost of Coal'. Last accessed from <http://www.greenpeace.org/africa/Global/africa/publications/coal/TrueCostOfCoal.pdf> on 14 January 2013.

¹⁴ Unless otherwise indicated, these facts were obtained from World Food Programme '7 Facts about Climate Change and Hunger' 4 December 2012. Last Accessed from <http://www.wfp.org/stories/7-facts-about-climate-change-and-hunger> on 2 December 2012.

2. 375 million people will be affected by climate-related disasters by 2015.
3. Two thirds of arable land in Africa could be lost by 2025 because of climate change.
4. Climate change may escalate food prices by up to 90 per cent more than they would otherwise be expected to rise by 2030.
5. An estimated 24 million children will be malnourished as a result of climate change by 2050.
6. South Africa is one of the highest polluters in the world: approximately 90 per cent of South Africa's power comes from coal,¹⁵ and South Africa produces approximately 270 million tones CO₂ per annum from electricity generation.

1.4 The obligation to invest in renewable energy in light of climate change

It is suggested that, in light of the risk of catastrophic climate change, the Constitution,¹⁶ the National Environmental Management Act¹⁷ and Natural Law oblige a project developer (an entity that builds owns and operates a renewable energy project) to invest in renewable energy. Below, these three sources of law are examined in the context of climate change in order to found a legal obligation to invest in renewable energy.

(i) The Constitution and the National Environmental Management Act

Section 24 of the Constitution provides that

Everyone has the right-

- (a) to an environment that is not harmful to their health or well-being; and
- (b) to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that-
 - (i) prevent pollution and ecological degradation;
 - (ii) promote conservation; and
 - (iii) secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.

CO₂ emissions resulting from, *inter alia*, the burning of fossil fuels emissions, through their effect on climate change, are harmful to human health and the environment.¹⁸ From the discussion on climate change above it can be said the CO₂ emissions cause pollution and

¹⁵ Department of Energy op cit note 4.

¹⁶ Constitution of the Republic of South Africa, 1996.

¹⁷ National Environmental Management Act 107 of 1998.

¹⁸ World Food Programme op cit note 14.

ecological degradation. Section 24 of the Constitution creates the right to an environment that is, *inter alia*, not harmful to human health or well-being, free of pollution and ecological degradation to the extent possible, and, by implication, free of, or with minimal, hazardous amounts of CO₂ emissions. It is arguable therefore that the production of energy that results in the release of dangerous quantities of CO₂ (or other greenhouse gases for that matter) into the earth's atmosphere constitutes an infringement of s 24. If this is true then it can be said that s 24 creates a duty to produce energy from renewable sources rather than fossil fuels.

Section 28 of the National Environmental Management Act ('NEMA') recognizes and supplements this duty. It provides that

(1) Every person who causes, has caused or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring, or, in so far as such harm to the environment is authorised by law or cannot reasonably be avoided or stopped, to minimise and rectify such pollution or degradation of the environment.

...

(14) No person may-

(a) unlawfully and intentionally or negligently commit any act or omission which causes significant or is likely to cause significant pollution or degradation of the environment;

(b) unlawfully and intentionally or negligently commit any act or omission which detrimentally affects or is likely to affect the environment in a significant manner;

Section 28 of the NEMA provides that anyone who '*...may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution...*'. It is suggested that even before a project developer has embarked on an energy project, when it is still making the decision to go forth, s 24 of the Constitution and s 48 of the NEMA obliges such project developer to choose renewables because the production of fossil fuelled energy contributes to catastrophic climate change and causes pollution which can and will harm human health, well-being and the environment.

One question is whether the infringement of s 24 through the burning of CO₂ emitting fossil fuels in the production of energy is justifiable. The Constitutional Court has held that

'The limitation of constitutional rights for a purpose that is reasonable and necessary in a democratic society involves the weighing up of competing values, and ultimately an assessment based on proportionality...'¹⁹

¹⁹ *S v Makwanyane* 1995 6 BCLR 665 (CC) 708.

Satisfying the country's voracious appetite for energy is arguably a reasonable and necessary purpose which might justify fossil fuelled energy. It might even be argued further that the 'right to energy' that lies implicitly in the right of access to adequate housing in s 26 of the Constitution further justifies such infringement:²⁰

'The state's obligation to provide adequate housing depends on context ... some may need access to land and no more ... some may need access to services such as water, sewage, *electricity* and roads'²¹

The argument goes as follows: the State's duty to take positive measures to realize the socio-economic right to energy, coupled with the need to address the current energy crisis, justifies the generation of fossil fuelled energy and the consequent infringement of s 24. It is submitted however that an infringement of s 24 is not justifiable when, and there can be no proportionality where, renewable energy is available as a cheap, clean and reliable alternative to fossil fuelled energy. The obligation to invest in renewable energy also has its roots in natural law.

(ii) Natural law obligation

The essence of natural law is that there are objective moral principles which depend upon the nature of the universe and which can be discovered by reason.²² These principles constitute natural law; and they dictate what human law or positive law ought to be.²³ Natural law dictates that the moral weight of the law should be considered when deciding on a course of action.²⁴

According to John Finnis, there exists certain 'basic goods' which are intrinsic goods - things one values for their own sake; and they are self-evident.²⁵ These goods include life (and health), play, aesthetic experience, sociability (friendship), knowledge, religion, and practical reasonableness.²⁶ At this level, we can distinguish the intelligible from the unintelligible, the right from the wrong, and the moral from the immoral: the ends never justify the means where

²⁰Ferriol Adam writing for Earthlife Africa Johannesburg 'Free basic electricity: a better life for all' 2010 p 9. Last accessed from <http://www.earthlife.org.za/wordpress/wp-content/uploads/2010/03/Free-Basic-Electricity-Final-Low-res.pdf> on 2 December 2012.

²¹ *Government of the Republic of South Africa and Others v Grootboom and Others* 2001 (1) SA 46 (CC) 37. Emphasis added.

²² MDA Freeman *Lloyd on Jurisprudence* 2008 4.

²³ *Ibid.*

²⁴ B Bix *Jurisprudence: Theory and Context* 2009 65.

²⁵ *Ibid* 74

²⁶ *Ibid.*

the chosen means entail the harming of a basic good.²⁷

It is suggested that the production of energy from fossil fuels harms at least 2 basic goods: life - through its effects on human health and well-being; and aesthetic experience - through the destruction of the environment. It is suggested further that this is morally reprehensible and inconsistent with natural law.

It is suggested that the obligation to invest in renewable energy is a natural law obligation - an objective moral principle which dictates what positive law ought to be. Section 24 of the Constitution and s 28 of the NEMA constitute the positive laws which give legal force to this natural law obligation. In this light, project developers that want to enter the renewable energy industry, and everyone else, must be bound by this obligation.

(iii) Conclusion

Energy is crucial for economic development including the eradication of poverty and the improvement of living standards. Energy directly contributes to meeting both basic human needs and more sophisticated human needs. Although there is a need to satisfy South Africa's appetite for energy – which currently entails the production of energy largely from coal, there is also a need for self-preservation: we must combat catastrophic climate change using clean energy sources in order to protect human life and our environment. The production of energy from coal is currently releasing unsustainable quantities of CO₂ into the atmosphere. South Africa is one of the highest polluters in the world. Escalated food prices, extreme weather events, and death are part of the risk that is taken unless South Africa does not make a drastic shift to renewable energy. The Constitution, NEMA and Natural Law oblige all project developers, and others, to choose renewable energy over fossil fuelled energy. South Africa must give effect to this legal obligation. It must facilitate as much participation in the renewable energy industry as is possible. Barriers to such participation exist; two are the focus of this paper: regulations and finance. We should invest in renewable energy and overcome the financial and regulatory barriers thereto because of climate change and the proposed legal obligation to do so.

1.5 Objectives

²⁷ Ibid.

The objective of this paper is to determine how new project developers in South Africa can generate renewable energy, reduce the country's dependency on coal produced energy, and mitigate the harmful effects of catastrophic climate change. This paper focuses on two barriers to a new project developer's participation in the renewable energy industry: government regulations and finance. The objective of this paper is to describe these barriers and to determine how to overcome them, thereby providing regulatory and financial prescriptions for the government and project developers, respectively, to follow in order to foster greater participation in the renewable energy industry and, ultimately, to mitigate the harmful effects of catastrophic climate change.

1.6 Overview

The renewable energy regulatory framework is the first point of focus of this paper. The paper aims to determine how the regulatory framework dually facilitates renewable energy generation and serves as a barrier to renewable energy generation. The paper will prescribe how this barrier can be overcome. Another barrier to renewable energy generation is finance; this is the second point of focus of this paper. The paper aims to determine the appropriate legal structure and the appropriate legal entity that can be used to finance renewable energy projects and overcome this financial barrier. The paper also aims to determine alternative ways in which to finance renewable energy projects.

Chapter 2 of this paper discusses the regulatory framework for renewable energy in South Africa. The issues covered in this chapter include the following: an overview of the policy and regulatory framework; the manner in which the regulatory framework facilitates participation in the renewable energy industry through a government programme; and lastly how the same regulations that facilitate renewable energy generation act as a barrier to renewable energy generation. It is argued that the current regulations restrict entry into the renewable energy industry. The paper proposes that the electricity industry be made more accessible by the abandonment of the current regulations and the adoption of other regulations that are available but are not being utilized.

Chapter 3 identifies finance as the second barrier to a project developer's participation in the renewable energy industry as an independent power producer. It is argued that project finance is the appropriate legal structure that can be used to overcome this barrier and reasons for its suitability for renewable energy project will be discussed; the security arrangements that can be

put in place to protect and encourage investors will also be discussed; and so will the financial and legal implications of using a company and using a trust as the appropriate legal entity. A brief tax analysis will assist in determining which of the two legal entities is preferable. Lastly chapter 3 will examine various sources of debt and equity funds for renewable energy projects

Chapter 4 examines alternative ways in which to finance renewable energy projects and their legal requirements. First, the use of securitisation as a cheaper alternative to commercial bank loans will be examined. The paper will give a detailed analysis of the regulatory framework for securitisation schemes and the manner in which it protects lenders and would encourage them to invest in renewable energy projects that employ such schemes. Second, carbon finance is discussed: its regulatory framework, the legal requirements for the sale of carbon credits, and the shortfalls of using carbon finance will be discussed. Third, the paper considers the use of climate bonds as an extra measure that different levels of government, and other financial institutions, can take in order to assist private sector entities in overcoming the finance barrier to renewable energy generation. The paper will attempt to show that the national government, local government, and public entities are all able to issue bonds for the financing of renewable energy projects; and it is argued that this avenue for funding should be exploited to a greater extent in order to give project developers access to cheap funding. Fourth, the use of public offers to raise funds is considered; and a brief discussion of the mandatory prospectus requirements and the current restrictions to using this form of finance is included. Lastly, the tax exemptions and deductions that project developers can make use of are examined. It is argued that sound tax planning is a necessary financing tool, not to raise funds, to save funds and it could ultimately determine the feasibility of a project.

The paper concludes in chapter 6.

1.7 Scope

This paper is concerned with the regulatory framework for renewable energy projects and the legal aspects of financing such projects. This paper does not contain a historical background of renewable energy in South Africa. This paper discusses environmental issues only in the context of climate change and does not discuss environmental impact assessments and similar or other environmental issues. This paper is focused on commercial scale renewable energy power plants that generate electricity to be bought by Eskom, a Municipality, or other similar institutions.

Domestic or personal energy generation projects such as home solar panels, or energy efficiency initiatives such as the promotion of gas cookers rather than wood or coal cookers, fall outside the scope of this paper. This paper focuses on renewable energy projects designed, constructed and financed in South Africa. Furthermore, this paper is focused on the investment in renewable energy by private entities rather than public companies; the paper does however consider the use public offers to raise finance for renewable energy projects.

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CHAPTER 2

THE ENERGY SECTOR POLICY AND REGULATORY FRAMEWORK

2.1 Introduction

South Africa is currently experiencing an energy crisis: there is a high likelihood that there will be an energy supply shortfall over the period until 2015.²⁸ Government policy has determined that there is a need for renewable energy in South Africa in light of climate change and the energy crisis,²⁹ and has drawn a road map for South Africa's energy future which details the sources of energy that will be utilized and their respective capacities. The renewable energy regulatory framework facilitates the achievement of the policy objectives; it empowers the Minister of Energy to determine the source, the quantity and the producer of new energy generation capacity. The Minister can be expected to make this determination in line with government policy. Ultimately, the Minister has the power to determine whether the renewable energy industry will accept new participants.

The following issues will be covered in this chapter: an overview of the policy and regulatory framework; the manner in which the regulatory framework facilitates private sector participation in the renewable energy industry, particularly through the renewable energy government programme; and lastly how the same regulations that facilitate renewable energy generation act as a barrier to private sector participation in the renewable energy industry. Regarding the last issue, it is argued that the current regulations restrict market entry. It is proposed that the renewable energy industry be made more accessible through the abandonment of the current regulations and the adoption of other regulations that are available but are not being utilized.

2.2 Policy and Legislative Framework Overview

(i) Policy

There are three major policy papers on renewable energy in South Africa which have as their objectives, *inter alia*, a reduction of carbon emissions and ensuring the security of energy supply

²⁸ *Integrated Resource Plan* (GN 400 in GG 34263 of 6 May 2011) Appendix E - Medium Term Risk Mitigation Project for Electricity in South Africa (2010 to 2016) 58.

²⁹ *Ibid.*

in light of the current energy crisis.³⁰ The foundational document is the White Paper on Renewable Energy (2003) which set a target of 10,000 GWh of renewable energy that is to be produced by 2013.³¹ Second, the Integrated Resource Plan ('IRP'; 2011), which seems to be the main policy document, predicts long term electricity demand and aims to determine how this demand should be met.³² Currently, the IRP determines that 17,800 MW of renewable energy should be produced by 2030;³³ this is the equivalent of 42 per cent of electricity demand for the same period. Last, the National Development Plan, released on 11 November 2011, which is not focused on renewable energy specifically, recognizes the need for renewable energy in South Africa and suggests that a transition to a low carbon, resilient economy can be made without harming jobs and competitiveness.

The IRP determines that, in the short term, if the demand for electricity remains moderate, there is a high likelihood that there will be an energy supply shortfall over the period until 2015; and unless extra-ordinary steps are taken, the risk of load shedding is significant.³⁴ South Africa's energy roadmap, as expressed in the IRP, is to utilize all the available resources - both renewable and fossil fuelled energy, with a view gradually decreasing South Africa's reliance on coal.

Although there is policy support for the participation of new project developers in the renewable energy industry, new coal projects such as Eskom's Kusile power station must not be supported. Kusile will generate approximately 37 million tonnes of CO₂ equivalent emissions annually, thereby increasing South Africa's total contribution to climate change by an astonishing 10 per cent.³⁵ Climate change necessitates a drastic shift from South Africa's current fixation on coal fuelled energy to renewable energy.

(ii) *The Electricity Regulation Act*

The Electricity Regulation Act³⁶ and the The Electricity Regulations on New Generation Capacity³⁷ facilitate the implementation of the policy issues outlined above. The Act is the main

³⁰ Ibid.

³¹ *White Paper on Renewable Energy* supra 'Renewable Energy Target' 25.

³² *Integrated Resource Plan* supra.

³³ Ibid 'Table 5: Commitments before next IRP' 16.

³⁴ Ibid Appendix E - Medium Term Risk Mitigation Project for Electricity in South Africa (2010 to 2016) 58.

³⁵ Greenpeace op cit note 13 at 3.

³⁶ The Electricity Regulation Act 4 of 2006.

piece of legislation that regulates the electricity industry in South Africa. Its objects are, *inter alia*, to achieve the sustainable and orderly development and operation of electricity supply infrastructure in South Africa; to ensure that the interests and needs of present and future electricity customers and end users are safeguarded and met; to facilitate investment in the electricity supply industry; and to promote the use of diverse energy sources.

Section 34 of the Electricity Regulation Act gives the Minister of Energy certain powers in relation to South Africa's new electricity generation capacity. It provides that the Minister may determine:

- a. that new generation capacity is needed;
- b. the types of energy sources from which electricity must be generated;
- c. the percentages of electricity that must be generated from such sources;
- d. that electricity produced may only be sold to the certain persons or in a certain manner; or must be purchased by certain persons.
- e. that the new generation capacity must provide for private sector participation and must be established through a tendering procedure.

From the above, it is evident that the source, the quantity and the producer of new energy generation capacity, specifically renewable energy, is dependent on ministerial determination. The Minister therefore has the power to determine the extent to which the private sector can participate in the renewable energy industry, reduce the country's dependency on coal, and mitigate the harmful effects of climate change. The Minister can be expected to make this determination in line with government policy.

(iii) The Electricity Regulations on New Generation Capacity

The Electricity Regulations on New Generation Capacity, issued in terms of the Electricity Regulations Act, regulate the procurement of new generation capacity, by organs of state, including new generation capacity derived from renewable energy sources.³⁸ Currently 90 per

³⁷ Electricity Regulations on New Generation Capacity in GN R721 GG 32378 of 5 August 2009.

³⁸ *Ibid* reg 2.

cent of South Africa's power comes from coal,³⁹ and so most renewable energy projects will constitute new generation capacity projects which fall within the ambit of these regulations.

The objectives of these Regulations are, *inter alia*, to facilitate planning for the establishment of new generation capacity; to regulate the conclusion of a power purchase agreement between a buyer and a generator; to set minimum standards or requirements for power purchase agreements; and to provide a framework for the implementation of an independent power producer procurement programme and the relevant agreements to be concluded.

The Minister of Energy has so far determined that the Renewable Energy Independent Power Procurement Programme ('REIPPPP') is the programme, in terms of the Electricity Regulations on New Generation Capacity, through which private sector project developers may participate in the renewable energy revolution and generate clean electricity.

The REIPPPP is a government renewable energy initiative in which project developers place bids during defined bidding windows and, upon successful bid, generate renewable energy as independent power producers. The electricity produced is fed into the national grid and a designated buyer purchases the electricity produced through a long term power purchase agreement. The PPA ensures a steady income flow for the project. Government guarantees, although they are not explicitly required by the regulations, can be included as part of the package to cover Eskom's obligations in cases of default. 28 successful bids were made in the first bidding window; they are all together they are meant to produce 3,725 MW of renewable energy.

2.3 Regulatory framework as a barrier to private sector participation

The restriction of private sector participation, or at least government consideration thereof, to defined bidding windows in terms the REIPPPP is a barrier to new renewable energy project developers. This barrier stems from ministerial determination, in terms of s 34 of the Electricity Regulation Act and reg 5 of the Electricity Regulations on New Generation Capacity, that independent power producers may only participate in the renewable energy industry in this manner. This ministerial determination is reflective of government policy which does not envisage a drastic shift from South Africa's current coal fixation to renewable energy; rather, it

³⁹ Department of Energy op cit note 4.

envisages a gradual shift to a clean and sustainable energy sector.

Perhaps it is more correct to say that it is government policy that is the barrier to renewable energy generation because of its failure to recognize the legal obligation to choose renewable energy over fossil fuelled energy. However, the risk of catastrophic climate change makes it imperative that action is taken now; and that there is a drastic abandonment of coal produced energy and the adoption of renewable energy. Rather than restrict entry into the renewable energy industry to bidding windows, the Minister of Energy should completely open up the industry: all independent projects of an acceptable standard should be permitted to sell electricity to Eskom, or any other designated buyer, at a set tariff.

Regulation 7 of the Electricity Regulations on New Generation Capacity provides for this in what is termed as a REFIT programme – the alternative to the REIPPP programme. REFIT is an acronym for ‘renewable feed-in tariff’ and is defined in the regulations as a tariff approved by the regulator (NERSA) for a renewable energy generator - or a guaranteed price for electricity supplied. The tariff covers the cost of generation plus a "reasonable profit" to incentivise project developers to invest.

Some of the specific objectives and key principles of the REFIT relevant for this discussion are to create an enabling environment for renewable electricity power generation in South Africa;⁴⁰ establish a guaranteed price for electricity generated from renewables for a fixed period of time that provides a stable income stream and an adequate return on investment;⁴¹ provide access to the grid and an obligation to purchase power generated;⁴² and create a critical mass of renewable energy investment and support the establishment of a self sustaining market.⁴³

REFIT does away with bidding windows and allows a renewable energy generator to sell all electricity generated to Eskom, or other entity designated by the Minister, at a set tariff, provided that certain criteria are satisfied.⁴⁴ The Minister of Energy had initially determined that REFIT

⁴⁰ South Africa Renewable Energy Feed-in Tariff (REFIT) - Regulatory Guidelines in GN 382 GG 32122 of 26 March 2009 guideline 3.5.

⁴¹ Ibid.

⁴² Ibid.

⁴³ Ibid.

⁴⁴ Electricity Regulations on New Generation Capacity supra reg 7(5).

would be the preferred form of procurement for renewable energy new generation capacity but later abandoned this position in favor of REIPPPP.⁴⁵

One argument that has been advanced against REFIT, which strikes at its legality, is that the notion of a procurement process based on predetermined tariffs set by the National Energy Regulator (‘NERSA’) is inconsistent with the Preferential Procurement Regulations,⁴⁶ issued in terms of the Preferential Procurement Policy Framework Act 5 of 2000. Regulation 3 of the Preferential Procurement Regulations provides that an organ of state must, prior to making an invitation for tenders, *inter alia*, determine and stipulate the appropriate preference point system to be utilized in the evaluation and adjudication of the tenders. Regulation 6 provides that tenders for the acquisition of services, works or goods with a Rand value above R1 million must follow a 90/10 preference point system which basically sets a 90 per cent evaluation weighting for price and a 10 per cent weighting for broad based black economic empowerment objectives. The formula for price evaluation envisages a comparative price or a competitive tendering process – unlike the predetermined tariff *à la* REFIT .

Commercial scale renewable energy projects are most likely to be valued at over R1 million. A government renewable energy procurement programme must therefore follow the 90/10 preference point system and employ a competitive tendering process. REFIT, which envisages a predetermined price set by NERSA, is inconsistent with the Preferential Procurement Regulations because it does not provide for a competitive tendering process.

Section 3 of the Preferential Procurement Policy Framework Act allows the Minister of Finance to exempt an organ of state from its provisions if such exemption would be, *inter alia*, in the public interest. It can be argued that the current competitive procurement process – REIPPPP – which restricts new renewable energy generation capacity to bidding windows is impeding the rapid development of the renewable energy industry and efforts to mitigate catastrophic climate change. Given the likely effects of catastrophic climate change highlighted above, including a hike in food prices, starvation, displacement of peoples and death, it is submitted that it would be in the public interest for the Department of Energy to be pronounced as exempt from the

⁴⁵ Terence Creamer ‘Renewables bid represents ‘substantive progress’, but raises compliance burden’. Last accessed from <http://www.engineeringnews.co.za/article/renewables-bid-represents-substantive-progress-but-raises-compliance-burden-2011-08-23> on 5 February 2013.

⁴⁶ Preferential Procurement Regulations GNR 502 in GG 34350 of 8 June 2011.

provisions of the Preferential Procurement Policy Framework Act for the purposes of the implementation of REFIT. This would spur the rapid development of the renewable energy industry;⁴⁷ and would better mitigate the risk of catastrophic climate change than REIPPPP.

Although, the legal adoption of REFIT would simply require the above pronouncement by the Minister of Finance, it seems that there were further reasons for its abandonment. One seemingly decisive reason is that, with rapidly falling renewable energy technology prices, predetermined tariffs might not be affordable or reflective of the market a few years down the line; and therefore they might be subject to constant review which would result in an unfavorable ‘stop/start’ procurement process.⁴⁸ However a constant review of tariffs should be seen as a necessary evil in the fight against climate change. In any case, a review of tariffs still takes place under the REIPPPP program – the difference being that it is the private sector entities that lower their tariffs with each bidding window in order to be more competitive rather than NERSA.

2.4 Conclusion

In spite of the existing barrier to entry into the electricity industry, it is evident from the policy and regulatory framework that renewable energy is not a dim prospect. Going forward, the industry should be opened up: REIPPPP should be abandoned in favour of REFIT. This way many more project developers can generate renewable energy, reduce the country’s dependency on coal, and mitigate the harmful effects of climate change. However REFIT is inconsistent with the Preferential Procurement Regulations. This inconsistency can be resolved if the Minister of Finance grants the Department of Energy exempt status from the provisions of the Preferential Procurement Policy Framework Act.

There should be a recognition and enforcement of the obligation to invest in renewable energy by and against project developers, polluters such as Eskom and everyone else. However, government policy does not recognize this obligation; coal produced energy remains a part of South Africa’s current and future energy plans. This policy stance is reflected in the electricity legislation and regulations which do not compel the production of renewable energy over coal;

⁴⁷ It is noteworthy that the REFIT model has been successful in other parts of the world. Terence Creamer ‘Renewables tender should be issued next week – DoE’. Last accessed from <http://www.polity.org.za/article/renewables-tender-should-be-issued-next-week---doe-2011-07-22> on 1 February 2013.

⁴⁸ Ibid.

and ministerial determinations which restrict private sector participation in the renewable energy industry.

CHAPTER 3

RENEWABLE ENERGY

PROJECT FINANCE

3.1 Introduction

Finance is the second barrier to renewable energy generation identified by this paper. Based on 2012 figures, solar projects cost at least R 31 million per mega-watt to construct; wind projects, R 17 million; and hydro projects also cost an estimated R 17 million.⁴⁹ New project developers need to be able to raise such funds. They will require an appropriate legal structure and an appropriate legal entity that can provide them with maximum funding capacity and provide sufficient security and returns for investors to encourage and protect investors.

In this chapter, it is suggested that project finance provides the appropriate legal structure; and a company SPV is the appropriate legal entity that can be used to overcome the financial barrier to renewable energy generation. The following issues will be covered: the concept of project finance; the reasons for its suitability for renewable energy projects; the security arrangements that can be put in place to protect and encourage investors; the financial and legal implications, including the tax implications, of using a company *vis a vis* a trust as the appropriate legal entity; and lastly, this chapter will consider various sources of funding for renewable energy projects that can form a part of the project structure.

3.2 What is Project Finance?

Project finance can be distinguished from direct finance. In direct finance, if an entity needs funds to acquire certain assets then the assets acquired and the funds raised are included in such entity's asset and liability portfolios;⁵⁰ any loans raised are serviced, and any return on equity is provided, from the cash flow of the entity's entire asset portfolio (that is, on its balance sheet).⁵¹

⁴⁹ US Energy Information Administration 'Cost and Performance Characteristics of New Central Station Electricity Generation Technologies. Last accessed from http://www.eia.gov/forecasts/aeo/assumptions/pdf/table8_2_er.pdf on 2 February 2013.

⁵⁰ Ibid.

⁵¹ Ibid.

The critical distinguishing feature of project finance is therefore that the project is a distinct legal entity.

Project finance may be defined as a financing mechanism by which funds are raised through debt and/or equity, on a limited recourse or nonrecourse basis, for a separable capital investment project; and by which any loans raised for the project are serviced, and any return on equity is provided, primarily from the cash flows from the project.⁵² Security for any funds invested in the project is dependent mainly on the profitability of the project and on the collateral value of the projects assets.⁵³ Generally, none of the other assets of the project sponsors are used to secure the project loans.⁵⁴

At the time that a project seeks funds, it has no operating history. Therefore, the creditworthiness of the project depends on its expected profitability and the credit enhancements provided by 3rd parties.⁵⁵ Project lenders need to be assured that the project will be fully operational; and that once operations begin the project will be economically viable.⁵⁶ Project developers must therefore be able to convince investors that the project is technically feasible and economically viable.

Once it is possible to create a separate legal entity, or special purpose vehicle ('SPV'), which can generate sufficient cash flows to pay off any investors, project developers must decide on the manner in which investors' funds will be channeled to the project. A variety of options exist including the following: a commercial bank loan could be given; or the SPV could issue debt instruments such as commercial paper; or the SPV could issue shares in itself; or equity contributors could give the SPV shareholder loans. In Chapter 4, the paper will examine the issue of debt instruments in a traditional securitisation scheme, and the issue of shares by the SPV in public offers as alternative ways to channel funds to the renewable energy project that can be employed in a project finance scheme

3.3 Suitability of Project Finance for Renewable Energy Project Developers

What follows are reasons for the suitability of project finance for renewable energy projects.

⁵² J Finnerty *Project Financing Asset-based Financial Engineering* 2nd Ed 2007 at 1.

⁵³ Ibid.

⁵⁴ Ibid 2.

⁵⁵ Ibid 7.

⁵⁶ Ibid.

(i) Ability to exist as separate or distinct legal entities

Project finance is suitable for electricity generation projects generally, and renewable energy projects specifically, because they are capable of existing as separate or distinct legal entities. The project assets, which could be the solar modules in a solar power plant, wind turbines on a wind farm, or a dam in a hydro-electric facility, can be held and operated by an SPV independently. The separate existence of the project comes with numerous advantages including the efficient allocation of risk, the expansion of the debt capacity of the project developers, and the ability to facilitate plural ownership.

There are many types of risk involved in renewable energy projects including economic, technical, environmental, and regulatory risk.⁵⁷ The separate existence of the project enables these risks to be flexibly and appropriately or efficiently allocated between different parties.⁵⁸ Typically, the project developer and other equity investors would use the project assets to secure project loans and not their other assets; they provide, at most, limited recourse to cash flows from their assets that are not part of the project.⁵⁹

Furthermore, project finance, being an off-balance-sheet method of finance, expands the debt capacity of project developers and other equity investors.⁶⁰ A project is structured in such a way that the project debt is not a direct obligation of its sponsors and does not appear on their balance sheets.⁶¹ Any of the sponsors' restrictions on borrowing in terms of existing debt obligations will not be applicable because it is the project entity that will undertake the debt and not the sponsor.

Furthermore, owing to their large capital costs, many investors can benefit from renewable energy projects. The ability of project finance to facilitate plural ownership makes it a suitable financing scheme for renewable energy projects because many different funding partners can be brought on board. Any restrictions on plural ownership in the Memorandum of Incorporation ('MOI')⁶² of the project developer would be inapplicable to the SPV - unless such restrictions

⁵⁷ A Campbell SA Renewable Energy IPP Procurement Process Presentation to UCT Renewable Energy Masters class conducted on 23 October 2012 at 19-35.

⁵⁸ J Finnerty op cit note 52 at 2.

⁵⁹ Ibid 2.

⁶⁰ Ibid 8.

⁶¹ Ibid.

⁶² An MOI is defined in the Companies Act 71 of 2008 s 1 as '...the document, as amended from time to time that sets out rights, duties and responsibilities of shareholders, directors and others within and in relation to a company, and other matters as contemplated in section 15...'

existed in the MOI of the SPV.

(ii) Cash flow certainty provided by policy and regulatory framework

In order for project finance to be a viable option, it is essential that a project must be able to generate a certain and sufficient cash flow to service its debt or provide an acceptable return on equity.⁶³ The renewable energy regulatory framework in existence in South Africa ensures that this is possible. Provided that the project complies with the existing regulatory framework, particularly the Electricity Regulations on New Generation Capacity, a project developer can expect the conclusion of long term power purchase agreements with Eskom, backed by government guarantees,⁶⁴ and this serves to ensure that a project has a certain and sufficient income stream which will enable it to pay its investors as long as it fulfills its contractual obligations.

3.4 Security Arrangements for Investor Comfort and Protection

Passive investors, including both equity investors and lenders, typically provide most of the capital for a project.⁶⁵ Generally these investors only want to receive a return on their financial investment.⁶⁶ Although they may bear certain credit risks, they are reluctant to bear significant operating risks.⁶⁷ Consequently, project financing entails developing a myriad of security arrangements to protect investors from the noncredit risks associated with the project;⁶⁸ thereby encouraging them to invest in a particular project.

Debt in a project finance scheme is in the first instance backed by the project itself; and then it is supplemented by security arrangements between the project entity and its equity contributors or other third party credit enhancers.⁶⁹ Lenders require the equity contributors, or other third party credit enhancers, to provide assurances that may include the following: that the project will be completed at all costs, or if not completed then the debt will be repaid in full;⁷⁰ that, once

⁶³ Ibid 2.

⁶⁴ A Campbell op cit note 57 at 19-35

⁶⁵ Ibid.

⁶⁶ Ibid.

⁶⁷ Ibid.

⁶⁸ Ibid.

⁶⁹ J Finnerty op cit note 52 at 88.

⁷⁰ Ibid.

completed, the project will produce enough cash to service all of its debt obligations;⁷¹ and that if the projects operations are interrupted, suspended, or terminated, for any reason, the project will continue to fulfill its debt obligations.⁷²

Other security arrangements for renewable energy projects include covenants restricting the activities of the project company, a ‘take or pay’ contract, third party financial support such as insurance or government guarantees, walk-in clauses and cession of the projects right to receive payments under a PPA.⁷³ Some of these security arrangements are discussed below.

(i) Security arrangements covering debt service: PPA

After the project commences operations, contracts for the purchase and sale of the projects output normally constitute the principal security arrangements for project debt.⁷⁴ Such contracts are intended to ensure that the project will receive revenues that are sufficient to cover operating costs fully and meet debt obligations timeously.⁷⁵ Lenders almost always insist that these contractual obligations be in place before they advance any loans to the project.

In renewable energy projects these contracts are referred to as power purchase agreements (‘PPA’s’). A PPA for the purchase and sale of electricity produced by a renewable energy project would be concluded between the SPV as power seller and Eskom, or any other entity that the Minister of Energy has designated, as the buyer of the power for a particular procurement programme. The Electricity Regulations on New Generation Capacity provide that the buyer must pay the seller for all electricity delivered to the grid connection point.⁷⁶ Such payments constitute the project revenues that the lenders look to for the payment of principle and interest and as security and in cases of default.

A PPA would typically be concluded on a take or pay basis.⁷⁷ A take or pay contract obliges the buyer of the projects output to pay for the output regardless of whether the buyer takes delivery.⁷⁸ It protects lenders by ensuring that Eskom is obliged to pay even when it does not

⁷¹ Ibid.

⁷² Ibid.

⁷³ Ibid 90.

⁷⁴ Ibid 95.

⁷⁵ Ibid.

⁷⁶ Electricity Regulations on New Generation Capacity supra regs 6(2), 7(5).

⁷⁷ A Campbell op cit note 57 at 31

⁷⁸ J Finnerty op cit note 52 at 95.

accept the electricity supplied or disputes the amount supplied. A take or pay contract usually does not require the buyer to pay if the project is unable to deliver therefore it protects lenders only if the project is operating at a level that enables it to service its debt.⁷⁹

(ii) Direct Security interest in project facilities

Lenders would first look to a project's cash flow for their debt to be serviced but they would also require a direct security interest in the project assets as second possible source of debt payment.⁸⁰ This security interest can take the form of a mortgage bond on all the immovable project facilities,⁸¹ and a notarial bond over the movable project facilities.⁸² These forms of security are often of limited value prior to project completion because the project may be worth substantially less than what it has cost to build thus far.⁸³

(iii) Security arrangements covering completion

The security arrangements covering completion of the project typically involve an obligation to bring the project to completion or else repay all project debt.⁸⁴ Lenders normally require that sponsors or other creditworthy parties provide an unconditional undertaking to furnish any funds needed to complete the project in accordance with the design specifications and place it into service by a specified date.⁸⁵ If the project is not completed by the specified date, or if the project is abandoned prior to completion for any reason, the completion agreement typically requires the sponsors or other designated parties to repay all project debt.⁸⁶ The obligations of the parties that provide the completion undertaking terminate when completion of the project is achieved.

(iv) Insurance

⁷⁹ Ibid 95. Clauses in the PPA that give effect to its take or pay nature include clauses stating that the buyer would be liable to pay 100 per cent of the tariff even if it disputes the amount; or that the buyer would be liable to pay 100 per cent of the tariff if the grid goes down.

⁸⁰ Ibid 90.

⁸¹ A Mortgage is a real right of security in respect of specified immovable property which secures a principle obligation between a creditor and a debtor: C. G. Van Der Merwe, J. É Du Plessis Introduction to the Law of South Africa (2004) at 229.

⁸² A notarial bond a real right of security constituted by registration pursuant to an agreement to grant security. The subject matter of a notarial bond is movable asset/s of the bond debtor, or movable assets in general which may include assets acquired after registration: Ibid at 234.

⁸³ J Finnerty op cit note 52 at 91.

⁸⁴ Ibid 92.

⁸⁵ Ibid.

⁸⁶ Ibid.

Lenders would typically require that the project SPV gets insurance for protection against certain risks including *force majeure* and business interruption.⁸⁷ The insurance would provide the funds necessary to restore the project in the event of *force majeure*, thereby ensuring that the project remains a viable operating entity.

Hydropower projects have the inherent risk that the river on which the facility is located may have low water levels.⁸⁸ Insurers have been willing to issue insurance against this risk:⁸⁹ the insurer makes payments on the policy when the project is not able to generate (and sell) sufficient electricity thereby protecting lenders by enabling the project to make its scheduled debt service payments.

(v) *Implementation Agreement*

Section 34 of the Electricity Regulation Act gives the Minister of Energy the power to determine who must produce new generation capacity. The implementation agreement is a contract by which the Minister of Energy permits a renewable energy project developer to produce new generation capacity.⁹⁰ The implementation agreement is also a contractual security arrangement by which the government guarantees Eskom's obligations as buyer of electricity thereby ensuring that the project SPV and creditors can still be paid even when Eskom defaults.⁹¹ In terms of the guarantee, the Department of Energy ('DoE') undertakes to the SPV primarily that Eskom, who remains bound to the SPV in terms of the PPA, will perform in its obligations to the creditor;⁹² and secondarily that if and so far as Eskom fails to do so the DoE will fulfill Eskom's obligations.⁹³

Additional protection that can be given to the SPV and lenders in the implementation agreement is an undertaking by the DoE to pay out compensation to lenders and shareholders for the termination of the PPA caused by government default events, which may include

⁸⁷ Ibid 99.

⁸⁸ Ibid.

⁸⁹ Ibid.

⁹⁰ A Campbell op cit note 57 at 31.

⁹¹ Ibid.

⁹² Ibid.

⁹³ The Ministers power to issue such a guarantee is exercised in terms of s 34(e) of the Electricity Regulations Act supra which provides that these powers are subject to the Public Finance Management Act 1 of 1999 s 66(2) ('PFMA'). In terms of s 66(2)(a) of the PFMA the issuance of such guarantee must be done in concurrence with the Minister of Finance.

Nationalization, expropriation and failure to cover the Buyer's payment obligations.⁹⁴ Such compensation would reimburse lenders for the full debt amount.

Conceivably, the undertaking by the DoE in the implementation agreement to pay compensation to lenders and equity investors on the happening of government default events will take the form of a *stipulatio alteri*: an agreement for the benefit of a third person:⁹⁵ the DoE, as promissory, would bind itself to the SPV, as stipulator, to be bound to the lenders and shareholders on the happening of specified government default events. Upon acceptance of this benefit, the lenders and shareholders will have an enforceable right - *vinculum juris* - against the DoE for the payment of compensation.

Figure 1 depicts the project structure given above with the implementation agreement in place.

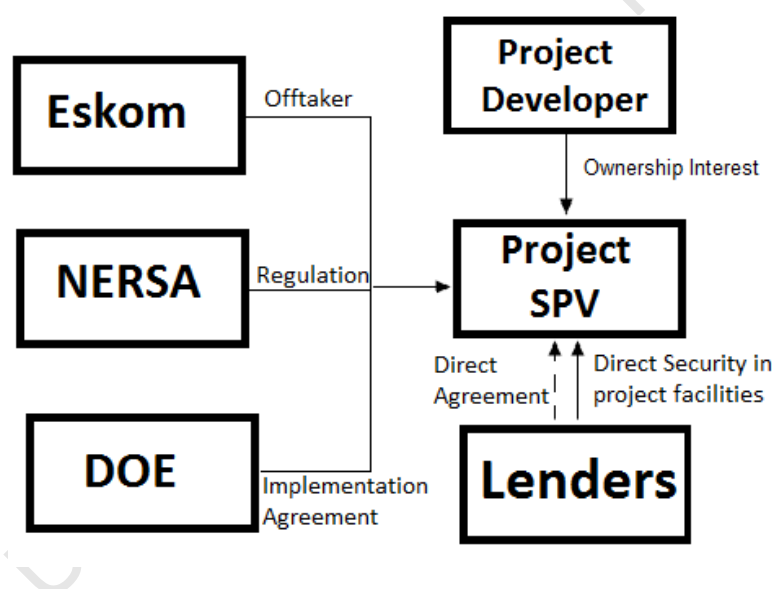


Figure 1: Implementation agreement project structure

(vi) *Walk-in Clauses/direct agreements*

⁹⁴ A Campbell op cit note 57 at 31.

⁹⁵ “An agreement for the benefit of a third person is often referred to in the books as a stipulation ... The third person having ... notified his acceptance and thus established a *vinculum juris* between himself and the promisor would be liable to be sued, as well as entitled to sue.” *McCulloch v Fernwood Estate Ltd* 1920 AD 204 206.

A walk-in clause permits a creditor or 3rd person to step-in to his debtor's shoes to exercise rights against such debtor's contractual partner on the happening of a trigger event. Although passive investors would be reluctant to assume operating risks, a walk-clause entitles a lender to take over a project, or to nominate a suitable person to take over a project, on the occurrence of events that signify a risk to the receipt of debt payments – the trigger events. Conceivably, there are three ways by which a lender can substitute a debtor: first, by taking cession of the debtor's rights; second, by way of delegation; and third, by concluding an accessory contract or direct agreements with the relevant parties which provide for the substitution of the debtor.

Typically, the parties would agree that a trigger event has occurred when the project entity receives notice of an event that could jeopardize the receipt of project receivables and consequently jeopardize its ability to service its loans.⁹⁶ A notice period gives the lender an opportunity to rectify any problems before the project, or any agreement that is relevant thereto, is terminated. Events with reference to which a notice is given, thus constituting the trigger event, may include the following:

- a. Liquidation of the SPV; or
- b. The National Energy Regulator of South Africa lawfully withdraws or revokes a generation license; or
- c. Seller abandons the Project; or
- d. Material breach by the SPV of its obligations in terms of the PPA, for example a failure to generate a specific quantity of electricity at a certain time or for a certain period.

Figure 2 depicts a renewable energy project with direct agreements concluded between the project lenders and the SPV, NERSA and Eskom which entitle the project lenders to replace the SPV, or to nominate someone to replace the SPV, on the occurrence of a trigger event - which may be the receipt by the SPV of a notice of any of the events listed above.

⁹⁶ A Campbell op cit note 57 at 31.

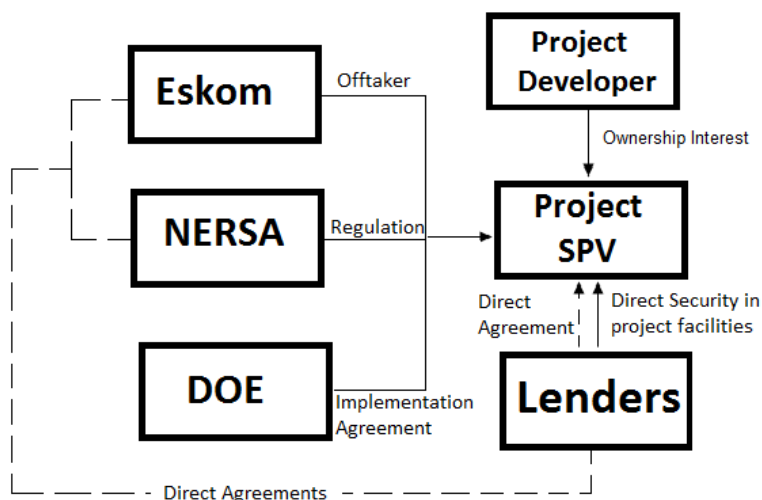


Figure 2: Direct agreements project structure

(vi) Conclusion

The principle security arrangement for a project finance scheme is a certain and sufficient income flow like a PPA, and the project assets. However a myriad of security arrangements can be put in place to protect lenders and to encourage them to put their funds in a particular object; various options have been considered above.

3.5 The SPV and its Appropriate Legal Form

The project finance structure entails the creation of a separate legal entity – the SPV - distinct from but owned by the project developer and other equity funders. Some of the benefits of its separate existence as part of the project structure have been discussed above. The SPV owns and operates the renewable energy power plant. It concludes all the necessary agreements with lenders, the subcontractors - including the engineering procurement and construction company - the purchaser of electricity, the government and others.

The legal form of an SPV determines the financing options available, its tax efficiency, and ultimately, its funding capacity – it is therefore an important consideration. An SPV that is tax efficient and has the maximum funding capacity would be ideal for renewable energy projects because they have a high capital outlay. In this section the common features of an SPV will be described; and a Trust SPV will be compared to a Company SPV in order to determine which of the two would be the most appropriate legal entity for the financing of renewable energy

projects.

(i) Features

The SPV would usually have the following features:⁹⁷

- a. the SPV is a distinct or stand-alone legal entity that can acquire rights and obligations;
- b. the SPV is set up as an insolvency remote entity; and if the project developer becomes insolvent, the SPV's assets do not form part of the project developers insolvent estate;
- c. the SPV has an independent board of directors with restricted powers and they have limited ability to change the formation documents - the MOI in the case of a Company SPV, and a trust instrument in the case of a Trust SPV;
- d. the SPV's activities are restricted by its formation documents; and the SPV can only perform activities instrumental to the project finance scheme.
- e. the cash flow out of the SPV is controlled by an independent party;

(ii) Legal form: Trust SPV v Company SPV

One similarity between a Trust SPV and a Company SPV is that a trustee, like the director of company owes fiduciary duties to the trust beneficiaries.⁹⁸ This fiduciary duty entails, *inter alia*, the duty to act in the best interests of the trust beneficiaries; and to exercise an independent judgment.⁹⁹ Trustees must not fetter their discretion or have instructions imposed on them and any attempt to do so would be irreconcilable with their fiduciary obligations, against public policy, and therefore unlawful.¹⁰⁰ Trustees are therefore in a similar position to the directors of a company. However, it is the differences between a Trust SPV and a Company SPV that determines which of the two would be more appropriate for a project finance scheme and a renewable energy project.

One advantage of using a Trust SPV is that there are fewer formalities or regulations for the management of a Trust SPV than there are for a Company SPV. The Companies Act is heavily

⁹⁷ Global Credit Rating Co *Global Structured Finance Rating Criteria* (2010) at 5.

⁹⁸ *PPWAWU National Provident Fund v Chemical Energy, Paper, Printing, Wood and Allied Workers' Union (CEPPWAWU)* 2008 2 SA 351 (W) 358E.

⁹⁹ *Ibid* 359D.

¹⁰⁰ *Ibid* 360D

regulatory. Its detailed provisions permeate almost all areas of high level action including directors meetings, shareholders meetings, and financial transactions through its solvency and liquidity test in s 4. The Companies Act provisions and restrictions for management would not apply to a Trust SPV (because it is not a company as defined in the Companies Act). From this perspective, a Trust SPV would be the preferable option.

However, there are also certain advantages to using a Company SPV rather than a Trust SPV. One advantage is that a company can issue shares and can make use of equity financing whereas a trust cannot. The ability to use equity finance is attractive because, by leveraging debt and equity, the SPV can maximize its funding capacity. Furthermore, returns on equity investments are dividends which are taxed at a favorable rate of 10 per cent.¹⁰¹ This is comparable to the income which is paid to trust beneficiaries and is taxed at a rate of 28 per cent - if the beneficiaries are companies,¹⁰² or up to 40 per cent- if the beneficiaries are individuals or trusts.¹⁰³ From this perspective, a Company SPV is a the preferable option – for the investors.¹⁰⁴

The use of a Trust SPV therefore limits the financing options available to the SPV; consequently, it limits the financing capacity of the SPV. Using a Trust SPV also prevents investors from obtaining the tax benefit in the form of a favorable tax rate of 10 per cent on dividends. On this basis, it can be said that a Company SPV is the preferred form of SPV.

3.6 Sources of Debt and Equity Funds for Renewable Energy Projects

(i) Overview

Policy support for renewable energy, for example the long term and large scale allocation to renewable energy in the IRP creates investment certainty which attracts equity investors.¹⁰⁵ Different investors will have different motivations, levels of risk aversion and return expectations. The Internal Rate of Return (IRR) is often the basis on which an investment is made.¹⁰⁶ The IRR is a discount rate that is often used in capital budgeting “that makes the net

¹⁰¹ Income Tax Act 58 of 1962 s 64G.

¹⁰² Rates and Monetary Amounts and Amendment of Revenue Laws Act 13 of 2012 Appendix 1 para 3(a)

¹⁰³ Ibid para 2.

¹⁰⁴ Chapter 5 will continue the discussion on the tax treatment of renewable energy projects.

¹⁰⁵ Mary Waller Risks and Returns of Renewable Energy Projects in South Africa: Perspective of an Equity Investor (Presentation) 2012 p 12.

¹⁰⁶ Ibid.

present value of all cash flows from a particular project equal to zero”;¹⁰⁷ IRR can be considered as the rate of growth of project as evaluated from a particular baseline which could be the investment cost.¹⁰⁸

Generally, a project with a higher IRR is a more attractive investment option than a project with a low IRR and so IRR can be used to rank several prospective projects:¹⁰⁹ investors will typically look to invest in projects offering a higher IRR.¹¹⁰ Other investors such as Development Finance Institutions (‘DFI’s’) do not base their decision to invest solely on IRR’s. They may be motivated more by the desire to alleviate poverty through the development of the renewable energy industry and to mitigate the harmful effects of climate change.¹¹¹

Below the paper examines private equity funds, DFI’s and other institutions as sources of debt and equity funds for renewable energy projects.

(ii) Private Equity and Venture Capital Funds

Rather than a offering shares to the general public through a listing on the Stock Exchange or otherwise, one or more private equity funds can be contacted to provide the equity financing for a renewable energy project. Private equity is often a form of value added financing: the private equity partners are often able to offer funding as well as management advice.¹¹²

Venture capital funds differ from private equity funds. The former have a higher risk appetite and will invest in new markets and so they usually require a high IRR; their investment horizon is typically between four and seven years.¹¹³ Private equity funds on the other hand typically target projects with more mature technologies and they look for projects with relatively high returns; their investment horizon is typically between three and five years.¹¹⁴

Two examples of private equity funds in South Africa with a preference for renewable energy projects include Hasso Plattner Ventures Africa; and Utho Capital Fund Managers.

¹⁰⁷ Investopedia ‘Definition of ‘Internal Rate of Return – IRR’. Last accessed from <http://www.investopedia.com/terms/i/irr.asp#axzz2IuaJGshh> on 24 January 2013.

¹⁰⁸ Ibid

¹⁰⁹ Ibid.

¹¹⁰ Mary Waller op cit note 105 at 16.

¹¹¹ Ibid.

¹¹² Ibid at 12.

¹¹³ Ibid.

¹¹⁴ Ibid.

(iii) Development Finance Institutions

Development Finance Institutions ('DFI's') operate in developing and reforming countries to foster growth, help reduce poverty and improve people's lives through financing and investing in private sector enterprises. DFI's often provide a variety of financial instruments including loans, equity contributions, and guarantees. One local DFI is the Development Bank of Southern Africa; and one foreign DFI is the Norwegian Norfund.

(iii) Other sources of debt and or equity funding

Other sources of debt and or equity funds include the following:

a. The National Treasury Renewables Fund

The National Treasury established the Renewables Fund to support the renewable energy programme in South Africa. Foreign donor assistance swells the fund which in turn disburses funds at concessional rates to individual IPP projects in the renewable energy.

b. The Renewable Energy Finance and Subsidy Office ('REFSO')¹¹⁵

This fund was established by the Department of Minerals and Energy. The office manages renewable energy subsidies and offers advice on renewable energy finance and subsidies. A variety of renewable energy projects have been subsidized by REFSO including the Darling Wind Farm in the Western Cape.

Figure 3 depicts a renewable energy project structure with a key sponsor holding an equity stake in an investment holding company which in turn wholly owns the project company; and a lender that provides debt funding. The key sponsor and/or lender could be one of the entities mentioned above, for example DBSA, Norfund or REFSO.

¹¹⁵ Department of Energy 'Renewable energy finance and subsidy office'. Last accessed from http://www.energy.gov.za/files/esources/renewables/r_refso.html on 14 January 2013.

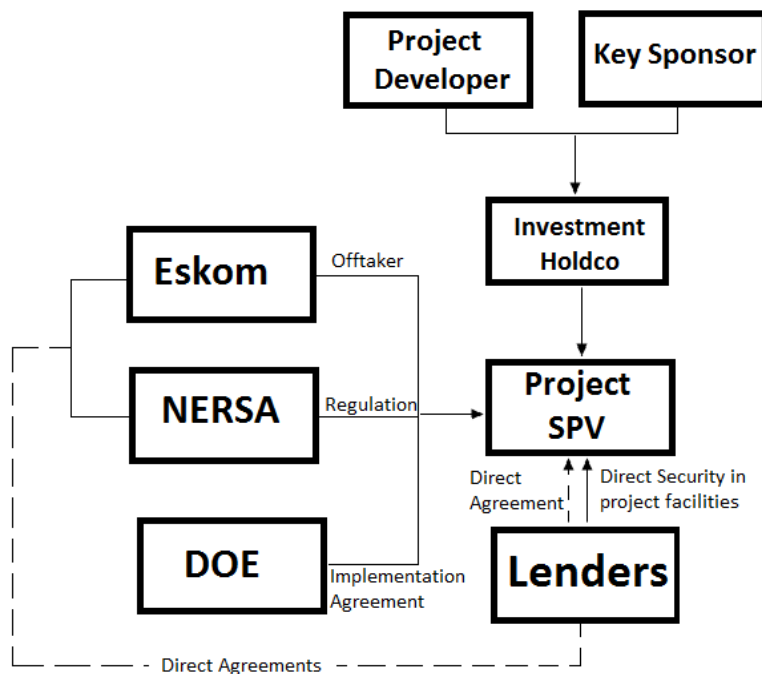


Figure 3: Key sponsor project structure

3.7 Conclusion

Finance is one barrier to renewable energy projects because of the large capital outlays that energy projects require. The creation of an SPV as the project vehicle that owns the project assets is central to this financing structure. The use of project finance is ideal because a project developer with little or no capital, or with restrictions on its borrowing capacity, or with restrictions on its ownership structure, can still raise the necessary funds for a renewable energy project. As long as the SPV is properly constituted as a separate legal entity, the creditors of the project developer will have no interest in the project assets; the investors can take security in the PPA payments and the project assets; and they may even have an ownership interest in the SPV; furthermore, the SPV can take on as much debt as its owners feel comfortable with. The SPV is in effect a construct of the law which enables the project developer to be 'born-again': it has no trading history, and owing to its separate existence, the project developer will stand to lose only as much as he has invested in the SPV (in a non-recourse structure). It has been suggested that a Company SPV is the preferable legal form that the SPV should take. This is because it enables the SPV to employ equity finance - which is of benefit to the project developer because, by

leveraging debt and equity finance, the SPV can maximize its funding capacity; and it has more favorable tax treatment than a Trust SPV – which is of benefit to the investors. Different sources of equity and debt finance were also considered.

CHAPTER 4

ALTERNATIVE FINANCING SCHEMES FOR RENEWABLE ENERGY PROJECTS

4.1 Introduction

This chapter explores alternative ways in which to finance renewable energy projects which are not concerned with the legal structure of the project or the legal entity used but can be used overcome the financial barrier to renewable energy generation and can promote climate change mitigation. The following alternatives will be considered: securitisation - as a cheaper alternative to commercial bank loans; carbon finance as a 'free' source of funds for renewable energy projects; the possibility of using climate bonds; public offers; and the use of tax exemptions and tax deductions to save funds and/or possibly make a project financially viable. Issues covered include their legal requirements, investor protection, and limitations to their use.

4.2 The use of securitisation to access cheap debt

(i) Overview

In this section, the paper considers the use of securitisation to raise fund for renewable energy projects. This funding alternative is attractive because securitisation can be used to access debt at lower interest rates than commercial bank loans.¹¹⁶ Securitisation schemes are regulated by the Securitisation Notice ('Notice')¹¹⁷ issued in terms of the Banks Act.¹¹⁸ The Notice will be discussed in order to gain an understanding of the legal requirements that must be satisfied in order for project developers to be able to use this form of finance. First the concept on securitisation will be explained. The three ways in which the Notice protects investors - thereby encouraging investment in securitisation

¹¹⁶ William M. Pride, Robert J. Hughes, Jack R. Kapoor Foundations of Business (2010) at 458.

¹¹⁷ Designation of an activity not falling within the meaning of "The Business of a Bank" (Securitisation Schemes) GN 2 GG 30628 of 1 January 2008 ('Securitization Notice').

¹¹⁸ The Banks Act 94 of 1990.

schemes - will then be examined; and lastly, the non-compliance ramifications will be considered.

(ii) *Securitisation defined*

The Notice refers to a special purpose institution ('SPI') rather than an SPV but there is no real difference between the two. The Notice defines an SPV as

'a company or trust, insolvency remote, incorporated, created or used solely for the purpose of the implementation and operation of a ... scheme;'

A traditional scheme is one in which a special purpose vehicle issues commercial paper to investors; uses the proceeds of such issuance primarily to obtain assets; and makes payments in respect of the commercial paper so issued from the cash flows arising from or proceeds derived from the assets.¹¹⁹ This financing scheme which makes use of a separate legal entity to raise funds, acquire assets, and then repay debt primarily from the cash flows of the assets so acquired, can be considered as one form of project finance.

Figure 4 depicts the use of a traditional securitisation scheme to raise funds for the acquisition of renewable energy assets.



Figure 4: Traditional Securitisation Scheme

The proceeds from the issue of commercial paper in a securitisation scheme would be used to acquire solar modules, wind turbines or other assets required for the renewable energy project. Principle and interest payments in respect of the commercial paper issued would be made from the cash flows from the PPA. Security for the commercial paper issued would be dependent mainly on the profitability of the renewable energy project; but also on the collateral value of the assets which the SPV acquires using the funds raised from the commercial paper issued. Once the commercial paper has been

¹¹⁹ Securitization Notice supra para 1 'Traditional Securitisation Scheme' definition.

repaid, the SPV would sell all its assets for a nominal amount to the project developer that created it and then the SPV can be deregistered from the companies register and will cease to exist.

A number of parties, omitted from figure 4, may be involved in a renewable energy traditional securitisation scheme: a servicing agent - usually the project developer - may be appointed to collect the PPA payments in order to repay the investors; a ratings agency may be appointed to rate the level of risk of the commercial paper issued; and credit enhancers, like the Department of Energy, may also be employed to guarantee the obligations of the SPV on the commercial paper issued.¹²⁰

(iii) The purpose of the Securitisation Notice

The purpose of the Notice is to exclude securitisation schemes from the meaning of ‘the business of a bank’ as defined in s 1 of the Banks Act. ‘The business of a bank’, as defined, includes

‘...the obtaining, as a regular feature of the business in question, of money through the sale of an asset ... subject to an agreement in terms of which the seller undertakes to purchase from the buyer at a future date the asset so sold or any other asset...’.

This is conceivably what happens in traditional securitisation scheme: an SPV sells the right to receive certain income - PPA payments - through the commercial paper issued; and will reacquire this right when principle and interest are fully repaid. Note that the commercial paper issued does not denote the right to receive PPA payments; the commercial paper denotes the SPV’s indebtedness to the investors. An accessory contract must be concluded between the SPV and the commercial paper subscribers in terms of which the right to receive PPA payments is transferred to the latter as security for the principle commercial paper obligation.

By excluding securitisation schemes from the provisions of the Banks Act, such schemes, and specifically the SPV, do not have to comply with, *inter alia*, the prudential requirements in chapter six of the Banks Act which include minimum requirements for

¹²⁰ N Locke *Aspects of Traditional in South African Law* (Unpublished LLD thesis, University of South Africa 2008) 2.

share capital and unimpaired reserve funds. The Notice therefore makes fundraising using securitisation easier or less onerous than banking.

(iv) Investor Protection

Securitisation is essentially a manner in which funds can be raised from the public. Without any further steps, by excluding securitisation schemes from the ambit of the Banks Act, the Notice would have created a regulatory void and would left investors vulnerable or without sufficient protection. The Notice therefore contains certain conditions which serve to ensure that investors remain adequately protected. These conditions have been stated in the Notice as conditions that must be satisfied in order for the activities of an SPV to be excluded from ‘the business of a bank’. The following conditions must be satisfied:

a. The SPV must have restricted capacity

As indicated in Chapter 3, the SPV must be precluded from entering into any transactions outside the particular project, or the securitisation scheme in this context.¹²¹ This can be achieved by ring-fencing the SPV. Where the SPV is a trust, its capacity can be restricted in the trust instrument. Ring-fencing of companies can be done in terms of sections 11, 13 and 15 of the Companies Act.

Restricting the capacity of the SPV to enter into transactions outside of the securitisation scheme reduces the risk of the SPV becoming insolvent or entering into transaction that would prejudice the investors. Ring-fencing the SPV therefore protects the investors. Another way to ensure that the SPV is insolvency remote would be for the SPV to conclude agreements with the investors and the parties involved in the scheme in terms of which they undertake not to apply for the winding-up of the SPV.¹²²

b. The project developer must limit its association with the SPV assets

¹²¹ Securitization Notice supra para 2(1)(c).

¹²² N Locke op cit note 120 at 44. The risk of such an application will be further limited if a trustee is appointed for the debenture-holders, so that only he may institute action on their behalf. This reduces the risk that any individual investor may apply for winding-up when it will not be in the interests of the majority of the investors

The project developer - referred to as the ‘originator’ in the Notice - must limit its association with the SPV’s assets. This requirement ensures that the SPV and the project developer cannot be considered to be in partnership or as one legal entity. It ensures that they are in fact separate legal entities; the project assets and liabilities are not on the balance sheet of the project developer; and the SPV is not exposed to the creditors of the project developer – thereby protecting lenders who subscribe to the commercial paper issued by the SPV. In order for the project developer to limit its association with the SPV, the following three conditions must be satisfied:

- (aa) Neither the SPV nor any of its creditors can have a right of recourse against the project developer) or any of its associated companies (‘associates’) in respect of costs, expenses or losses incurred in connection with any of the SPV’s assets after they have been acquired by the SPV.¹²³
- (bb) If the project receivables, that is the PPA payments in a renewable energy project, are routed through the agency of the project developer or associates, the latter must not be obliged to remit funds to the SPV unless and until the payments are actually received from Eskom or any other buyer as determined by the Minister in terms of s 34 of the Electricity Regulation Act.¹²⁴
- (cc) In the case of a SPV that is a company, the project developer or associates must not directly or indirectly hold any equity stake in such SPV of which the nominal value represents 20 per cent or more of the nominal value of all the issued share capital of the SPV;¹²⁵ or have the right to determine the outcome of the voting at a general meeting of the SPV.¹²⁶

In the case of a SPV that is a trust, the project developer or associates must not directly or indirectly hold any beneficial interest in or be a beneficiary of such a SPV of which the value represents 20 per cent or more of the total interest in the trust property;¹²⁷ or have the right to determine the outcome of the voting at a general

¹²³ Securitization Notice supra 89 para 4(2)(c).

¹²⁴ Ibid 4(2)(f).

¹²⁵ Ibid 4(2)(p)(i)(A).

¹²⁶ Ibid 4(2)(p)(i)(B).

¹²⁷ Ibid 4(2)(p)(ii)(A).

meeting of the SPV.¹²⁸

Although the board of directors or body of trustees, as the case may be, of a SPV must be independent of the project developer or associates, the project developer or associates may appoint one director to the SPV board of directors, which board of directors must not consist of less than three members; or appoint one trustee to the SPV body of trustees, which body of trustees must not consist of less than three members, as the case may be.¹²⁹

c. Conditions relating to the issue of commercial paper¹³⁰

The Notice also sets certain conditions relating to the issue of commercial paper which also serve to provide a measure of investor protection. The following three conditions must be satisfied before commercial paper can be issued in a valid traditional securitisation scheme:

(aa) The commercial paper must be issued in minimum denominations of R1 million¹³¹

The commercial paper must be issued only in minimum denominations equal to or greater than an initial principal value of R1 million unless the commercial paper is listed on a licensed financial exchange;¹³² endorsed by a bank;¹³³ issued for a period of longer than five years;¹³⁴ or backed by an explicit national Government guarantee.¹³⁵

By setting a minimum denomination of R 1 million for the commercial paper issued, or alternatively by making the issue period longer than five years, this condition seems to ensure that it is sophisticated investors that purchase the commercial paper issued - investors with knowledge and/or experience of similar commercial transactions - and so the need for other protective measures does not arise. Less sophisticated investors, with less money to invest, who are

¹²⁸ Ibid 4(2)(p)(ii)(B).

¹²⁹ Ibid 4(2)(q).

¹³⁰ Ibid 14.

¹³¹ Ibid 14(1)(b)(i).

¹³² Ibid 14(1)(b)(i)(A).

¹³³ Ibid 14(1)(b)(i)(B).

¹³⁴ Ibid 14(1)(b)(i)(C).

¹³⁵ Ibid 14(1)(b)(i)(D).

more vulnerable, and might be able to purchase lower denomination notes, need greater protective measures. Hence the further requirements that must be satisfied where commercial paper in denominations of less than R1 million is issued: listing on a financial exchange, a bank endorsement, or a government guarantee.

(bb) The registrar of Banks must authorize the issue of commercial paper

The registrar of Banks must, in writing, authorize the issue of commercial paper and may determine that certain conditions must be satisfied in relation to such issue.¹³⁶ The registrar can be expected to ensure that the financing scheme is legally compliant and that investors are sufficiently protected.

(cc) Disclosure and disclaimer condition

Before commercial paper can be issued, investors in a traditional securitisation scheme must be made aware that the instruments in which they invest do not represent deposits in a bank; that the instruments are subject to investment risk, including possible delays in repayment and loss of income and principal amounts invested, and that the project developer and associates do not guarantee the capital value or performance of the commercial paper issued. This information can be included in a mandatory disclosure document.¹³⁷

¹³⁶ Ibid 14(1)(b)(ii).

¹³⁷ Ibid 14(1)(c). The disclosure document must be published and must, as a minimum, contain the following further information:

- (a) the name of the SPV;
- (b) the name of the auditor of the SPV;
- (c) the total amount of commercial paper to be issued by the SPV;
- (d) whether or not the particular issue of commercial paper is listed;
- (e) a description of the renewable energy assets acquired;
- (f) a description of the cash flows arising from the assets purchased that will be utilised for the payments by the SPV in respect of the commercial paper issued - that is the PPA payments;
- (g) confirmation by the auditor of the SPV that the issue of commercial paper complies in all respects with the relevant provisions of the Securitisation Notice;
- (h) the details of any credit-enhancement facilities;
- (i) the details of any liquidity facilities;
- (j) that the project developer is not obliged to support any losses suffered by the SPV or investors in the SPV;
- (k) that the board of directors or the trustees of the SPV are independent from the project developer;
- (l) all other information that may reasonably be necessary to enable an investor to ascertain the nature of the financial and commercial risk of his or her investment.

This condition protects investors by ensuring that they know exactly what they are getting themselves into. Once adequate disclosure is made and investors are made aware that the commercial paper that they are investing in carries investment risk then, as long as the other conditions above are satisfied, an investor has no one to blame if such investor incurs losses or does not earn its expected returns.

(v) Non Compliance Ramifications

The Securitisation Notice requires that the conditions above are satisfied in order for a securitisation scheme to be valid and to fall outside the definition of ‘the business of a bank’. If the SPV does not comply with the above conditions, as stipulated in the Securitisation Notice, then s 83 of the Banks Act provides that the Registrar of Banks may direct the SPV to repay all the money obtained through the traditional securitisation scheme in so far as such money has not yet been repaid, including any interest. A failure to comply with such a direction constitutes an offence; and will be deemed to be an act of insolvency entitling the Registrar to apply for the winding-up of the SPV.

(vi) Conclusion

Securitisation can be considered as a cheaper alternative to commercial bank borrowing. It is essentially a way to borrow money from the public at low interest rates. The act of tapping money from the public must be regulated. The same way that bank deposits are regulated by the Banks Act, securitisation schemes are regulated by the Securitisation Notice. Strict conditions must be satisfied in order for a renewable energy project to utilize this alternative and cheaper form of finance. A failure to comply with the conditions can result in the SPV receiving an order from the Registrar of Banks to repay all moneys borrowed including interest; and may even result in the winding-up of the SPV. This section gave a detailed description of the manner in which investors in a renewable energy project that employs a securitisation scheme are protected by the Notice. This encourages investors to put their money in securitisation schemes because the conditions serve to ensure that investors are sufficiently protected.

4.2 Carbon Finance

(i) *Overview*

This section of the paper considers the use of carbon finance, specifically the sale of carbon credits, as a ‘free’ source of funding for renewable energy projects. The regulation of carbon finance and the limitations to its use will also be examined.

The United Nations Framework Convention on Climate Change (‘UNFCCC’) is a treaty which aims to achieve the stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent the harmful effects of climate change from occurring.¹³⁸ The Kyoto Protocol to the UNFCCC set binding obligations on the industrialized countries to reduce their emissions of greenhouse gases.¹³⁹ South Africa signed the UNFCCC on 15 June 1993, ratified it on 29 August 1997, and ratified the Kyoto Protocol on 31 July 2002.¹⁴⁰ As a developing country, South Africa has no binding emission reduction commitments under the Kyoto Protocol.¹⁴¹ However, at the Copenhagen climate change summit, the South African government committed itself to reducing carbon emissions by as much as 42 per cent, or 275 million tons per year by 2025.¹⁴²

The Clean Development Mechanism (‘CDM’) established in terms of the UNFCCC allows industrialized countries to meet part of their emission reduction commitments by acquiring carbon credits.¹⁴³ A carbon credit is a tradable certificate representing the right to emit one tonne of CO₂ or the mass of another greenhouse gas equivalent in its effect on climate change to one tonne of CO₂.¹⁴⁴ Carbon credits are issued based on emissions reductions; which in turn are calculated using a ‘business as usual’ baseline which represents emissions trends that would occur if the CDM project was not in place: the

¹³⁸ ‘Background on the UNFCCC: The international response to climate change’. Last accessed from http://unfccc.int/essential_background/items/6031.php on 24 January 2012

¹³⁹ Ibid.

¹⁴⁰ UNFCCC ‘Parties and Observer States: South Africa’ Last accessed from <http://maindb.unfccc.int/public/country.pl?country=ZA> on 24 January 2013.

¹⁴¹ Ibid.

¹⁴² South Africa’s National Statement to COP16/CMP 6 presented by Minister Edna Molewa Minister of Water and Environmental Affairs. Last accessed from http://unfccc.int/files/meetings/cop_16/statements/application/pdf/101209_cop16_hls_south_africa.pdf on 24 January 2013.

¹⁴³ UNFCCC ‘What is CDM’. Last accessed from <https://cdm.unfccc.int/about/index.html> on 24 January 2013.

¹⁴⁴ Ibid.

amount by which greenhouse gas emissions are reduced by the CDM project is the basis on which a carbon credit is issued.¹⁴⁵ The price of CER's is negotiated between buyers and sellers and is not predetermined;¹⁴⁶ it may vary according to project risk, the buyer, and on any additional quality requirements.¹⁴⁷

The production of energy from renewable technologies prevents the production of fossil fuelled energy - especially from coal - thereby reducing CO₂ emissions. This is essentially what is required for a renewable energy project to be registered as a CDM project. Simply by generating renewable energy, a project can potentially generate carbon credits and can use them for financing purposes. In this sense, carbon credits can be considered as a free source of funds for renewable energy projects because, other than registration and transaction costs, one does not pay for their production.

Emission reduction measures generally work out cheaper if they are performed in developing countries rather than in industrialized countries.¹⁴⁸ Therefore there is an economic incentive for industrialized countries to meet their emission reduction obligations by investing in developing countries.¹⁴⁹ The carbon credits generated by a renewable energy project in South Africa may be sold to these industrialized countries once they are earned, or they may be sold in advance to finance the project.

(ii) Regulation

A Designated National Authority (DNA) is the local authority responsible for the approval of CDM projects. The Minister of Environmental Affairs and Tourism exercising its powers under s 25(3) of the National Environmental Management Act designated the Director-General of the Department of Minerals and Energy as the DNA in the South Africa. Renewable energy projects that want to make use of this source of

¹⁴⁵ Ibid.

¹⁴⁶ UNFCCC 'Frequently Asked Questions: How much do CERs cost?'. Last accessed from <http://cdm.unfccc.int/faq/index.html> on 2 December 2012.

¹⁴⁷ The CDM does not provide much additional finance to renewable energy projects. Biogas and biomass renewable energy projects are said to receive more carbon credits than wind and hydro power projects' Miriam Schroeder 'Utilizing the clean development mechanism for the deployment of renewable energies in China' *Applied Energy* 86 (2009) 237-242 239.

¹⁴⁸ Department of Energy 'Designated National Authority: Carbon Trading'. Last accessed from http://www.energy.gov.za/files/esources/kyoto/kyoto_frame.html on 24 January 2013.

¹⁴⁹ Ibid. GHG's mix uniformly in the earth's atmosphere therefore it does not matter where one reduces emissions in order to meet the emissions targets.

funds must submit their projects for evaluation and approval to the DNA.

The Minister of Energy has set a sustainable development criterion that must be satisfied before a project can be approved.¹⁵⁰ In addition to this criterion, the validation and registration requirements in section I G of the Marrakesh Accords - the regulative rules for the CDM - must also be satisfied. It is the Marrakesh Accords that require that CDM projects must be additional to the business as usual scenario; that is, that CDM projects must be able to bring about a reduction in emissions in the sense that emissions would be higher if the project was not in place.¹⁵¹

(iii) Limitations on the use of carbon finance for renewable energy projects

One problem with using carbon credits as a source of finance is that renewable energy projects are not as profitable as other CDM projects:¹⁵² the rate at which renewable energy projects reduce CO₂ emissions and generate carbon credits is relatively low when compared to other emission reduction projects. To illustrate this point, the Kyoto Protocol identified six greenhouse gases which are evaluated differently according to extent to which they contribute to global warming, HFC 23 is one of them.¹⁵³ One tonne of HFC 23 that is prevented generates 12,000 CERs; whereas one tonne of CO₂ that is prevented generates 1 CER.¹⁵⁴ Investors that are in the market for carbon credits are likely to prefer large CDM projects that generate many carbon credits and have low transaction costs - like HFC 23 destruction projects - because they have a larger profit margin.¹⁵⁵ This is one limitation for the use of carbon credits as a source of finance for renewable energy projects.¹⁵⁶

Another issue that arises is that, at the time when an investor or project developer decides to invest or embark on a project there might still be uncertainty regarding CDM

¹⁵⁰ Regulations for the Establishment of a Designated National Authority for the Clean Development Mechanism GN R 721 GG 27788 of 22 July 2005 reg 6.

¹⁵¹ Conference of the Parties to the Kyoto Protocol 'Marrakesh Accords & the Marrakesh Declaration' para I G 43. Last accessed from http://unfccc.int/cop7/documents/accords_draft.pdf on 2 December 2012.

¹⁵² Miriam Schroeder op cit note 147 at 238.

¹⁵³ Kyoto Protocol to the United Nations Framework Convention on Climate Change UN Doc FCCC/CP/1997/7/Add.1, Dec. 10, 1997; 37 ILM 22 (1998) Annex A.

¹⁵⁴ Miriam Schroeder op cit note 147 at 238.

¹⁵⁵ Ibid 239.

¹⁵⁶ Ibid.

project approval by the Designated National Authority.¹⁵⁷ As a result, revenue from the carbon credits cannot be relied upon in the early stages of the project. Although the carbon credits could possibly make a project profitable, they might not sufficiently influence the decision to invest.¹⁵⁸

Furthermore, as mentioned above, the price of carbon credits is not fixed, it is dictated by the market. During times when their price is low, carbon finance will not be healthy source of funds.

(iv) Conclusion

Previously, there was uncertainty with regard to whether the Kyoto Protocol would be extended beyond the year 2012. However, an 8 year extension to the Kyoto Protocol was agreed upon which will take it until the year 2020.¹⁵⁹ Carbon finance therefore remains as another alternative form of finance for renewable energy projects. However, it cannot be relied upon entirely: investors are likely to prefer more profitable CDM projects like HFC 23 destruction; furthermore carbon finance cannot form the basis of a decision to invest in renewable energy – first because of delays in project approval and also because of the volatility of the carbon market.

4.4 Climate bonds

In this section the paper discusses the use of climate bonds as a measure that the government, public entities and other financial institutions can take to provide project developers with cheap funds to help them overcome the financial barrier to renewable energy generation and to mitigate the risk of catastrophic climate change. The following issues will be covered: the concept of climate bonds; the legal requirements for the issuance of climate bonds by the national government and the possibility of this happening; the legal requirements for the issuance of municipal climate bonds and possibility of this happening; the legal requirements for the issuance of public entity bonds and how Eskom is already using this form of finance; and lastly the paper will

¹⁵⁷ J I Lewis 'The evolving role of carbon finance in promoting RE development in China' *Energy Policy* 38 (2010) 2875–2886 2880.

¹⁵⁸ Ibid.

¹⁵⁹ Kyoto Protocol to the United Nations Framework Convention on Climate Change UN Doc FCCC/CP/1997/7/Add.1, Dec. 10, 1997; 37 ILM 22 (1998) art 3 para 1.

attempt to determine which of the aforementioned alternatives would be the best option to pursue.

(i) What are climate bonds?

A bond is a long-term debt instrument used by both the private and public sectors to raise capital.¹⁶⁰ It connotes a legally binding promise undertaken by the bond issuer to repay an amount borrowed from the bondholder with interest. Bonds are backed by the issuing institutions assets.¹⁶¹ Like shares, bonds can be sold over the counter or they can be sold on the Johannesburg Stock Exchange. An issuer must meet the JSE listings requirements before its bonds can be sold on the JSE.

A bond matures on the date on which the principal amount becomes due and is repaid to the investor and the interest payments stop.¹⁶² Inflation, the creditworthiness of the bond issuer, and the length of time before maturity are a few of the factors that may affect the interest charged or bond yield.¹⁶³ Whereas junk bonds – bonds that are not of investment grade - require high yields to attract investment, government bonds are generally considered as having no risk and therefore they have lower yields; in this sense, government bonds are attractive for investors.

The length of time before maturity distinguishes bonds from other debt instruments.¹⁶⁴ Short term instruments are often referred to as ‘bills’, they take between one and five years to mature. Medium term instruments - ‘notes’ - take between six and twelve years to mature; and long term instruments - ‘bonds’ - reach maturity after twelve years.

Bonds issued for the finance of renewable energy can be referred to as climate bonds, although climate bonds would typically be issued to finance all manner of climate change mitigation efforts and not specifically renewable energy projects. Climate bonds would typically be ring-fenced: the issuing institution would make an undertaking that

¹⁶⁰ Bond Exchange ‘South Africa’ An Introduction to Investment [http. Last Accessed from //www.bondexchange.co.za/south-africa](http://www.bondexchange.co.za/south-africa) on 2 December 2012.

¹⁶¹ Ibid.

¹⁶² Ibid.

¹⁶³ Ibid.

¹⁶⁴ Ibid.

the money raised would be invested only in renewable energy projects;¹⁶⁵ the issuing institution could also undertake to report to subscribers on the performance of the projects that have been invested in.¹⁶⁶ Nedbank has issued a climate bond for climate change mitigation projects in general but it refers to them as ‘Green Bonds’.

Climate bonds are an attractive way to finance renewable energy projects because they can be used to tap into the wealth of funds that are held by institutional investors such as pension funds and insurance companies.¹⁶⁷ Renewable energy projects typically involve high capital expenditure and the large sums involved would lure institutional investors.¹⁶⁸ Another feature of renewable energy projects which is attractive for institutional investors is that they often have a secure and predictable income stream – which, as stated in Chapter 5, can be considered as a form of security.¹⁶⁹

Government guarantees can be included as part of the package to ensure that the climate bonds issued attain investment grade ratings (the same way that government guarantees in the REIPPPP give investors protection). Other measures that can improve the ratings of climate bonds include tax-breaks (discussed in section 4.5 below), regulatory support such as REIPPPP, and the anticipated carbon tax – which would deter investment in fossil fuelled energy.

What is important for the successful issuance of climate bonds to finance renewable energy projects is that there is cooperation from all spheres: the government, institutional investors, banks and project companies must work together to ensure that the climate bonds issued are investment grade, that they are subscribed to and importantly, that the renewable energy industry is accessible and supported.

¹⁶⁵ Ibid.

¹⁶⁶ Ibid.

¹⁶⁷ S Kidney ‘Mobilizing Bond Markets for the Low Carbon Transition An 8 point plan’ *Climate Bonds Initiative* 2012 Last accessed from http://climatebonds.net/wp-content/uploads/2012/06/ClimateBonds_Davos_25Jan12-1.pdf on 2 December 2012.

¹⁶⁸ Ibid.

¹⁶⁹ Ibid.

(ii) *National government bonds*

The National Government can issue climate bonds if the provisions of the Public Finance Management Act are followed.¹⁷⁰ The Act provides that the National Government, through the Minister of Finance, may borrow money or enter into any other transaction that binds or may bind the National Revenue Fund to any future financial commitment.¹⁷¹ It may borrow money for a closed list of purposes,¹⁷² the financing of renewable energy projects is not one them. For the National Government to borrow money for such purposes, a special resolution of the National Assembly is required.¹⁷³ If the National Assembly approves the incurrence of debt by the National Government then the repayment of principal, interest and other costs would be direct charges against the National Revenue Fund.¹⁷⁴

The issuance of climate bonds by the National Government would create a large source of funds for renewable energy projects. It would also serve as a strong signal that South Africa is serious about climate change as the government has proclaimed at UN conventions. The moneys raised would be disbursed as grants or cheap loans.

However s 71(f) of the Public Finance Management Act provides that a special resolution of the National Assembly is required before the government can issue a climate bond.¹⁷⁵ National Assembly approval might not be possible to attain due to fact that a special resolution is designed to be difficult to attain; but especially because of the cloud of skepticism that hovers over the renewable energy industry;¹⁷⁶ and the National Governments (and, by implication, a majority of Parliaments) apparent fixation on coal which is evident from its support of Eskom's two new and massive coal power stations

¹⁷⁰ Public Finance Management Act supra s 66(2).

¹⁷¹ Ibid.

¹⁷² This list includes the following purposes:

- (a) To finance national budget deficits;
- (b) to refinance maturing debt or a loan paid before the redemption date;
- (c) to obtain foreign currency;
- (d) to maintain credit balances on a bank account of the National Revenue Fund;
- (e) to regulate internal monetary conditions should the necessity arise; or

¹⁷³ Public Finance Management Act supra s 71(f).

¹⁷⁴ Ibid s 73.

¹⁷⁵ This seems to be inconsistent with s 53(1)(c) of the Constitution which provides that all questions before the Assembly are decided by a majority of the votes cast.

¹⁷⁶ David Gleason 'Renewable energy a dim prospect' Business Day Newspaper 2 November 2012.

through government guarantees.¹⁷⁷

(iv) Municipal bonds

Strict legislative provisions govern the Municipal fiscal processes. Municipalities that want to issue climate bonds or otherwise invest in renewable projects must overcome two broad legal hurdles. First, they must find a statutory mandate and justification for committing financial and other resources to such projects.¹⁷⁸ Second, they must plan and implement the projects within the constraints of the Municipal Finance Management Act.¹⁷⁹

a. Statutory mandate: The Constitution, Municipal Systems Act, NEMA

The Constitution provides that one of the objects of local government is to ensure the provision of services to communities in a sustainable manner.¹⁸⁰ Another object of local government is to promote a safe and healthy environment. The Constitution provides further that a Municipality must strive, within its financial and administrative capacity, to achieve these objects;¹⁸¹ and that a municipality must structure and manage its administrative, budgeting and planning processes to give priority to the basic needs of the community; and to promote the social and economic development of the community; and to participate in national and provincial development programmes.¹⁸²

The Municipal Systems Act provides that a municipality has all the functions and powers conferred by or assigned to it in terms of the Constitution; and that a municipality has the right to do anything reasonably necessary for or incidental to the effective performance of its functions and the exercise of its powers.¹⁸³

The NEMA prescribes environmental management principles which are binding on organs of states with regard to all their activities. It provides that development must be

¹⁷⁷ Eskom 'Bonds: Government Guarantees'. Last accessed from <http://www.eskom.co.za/c/88/bonds/> on 6 February 2013.

¹⁷⁸ Lisa Thompson-Smeddle (Ed) *A South African Renewable Energy Guide for Local Government* 2012 at 22.

¹⁷⁹ Ibid 22.

¹⁸⁰ Constitution supra s 152(1).

¹⁸¹ Ibid s 152(2).

¹⁸² Ibid s 153.

¹⁸³ Municipal Systems Act 32 of 2000 s 8.

socially, environmentally and economically sustainable.¹⁸⁴ One factor to be considered in sustainable development is that pollution and the degradation of the environment are to be avoided, or, where they cannot be altogether be avoided, are minimized and remedied.¹⁸⁵

Generally, energy is a basic need for communities which fosters development. Renewable energy provides this basic need in a sustainable manner. Read together, the objectives of Municipalities as stated in the Constitution, the empowerment provisions in the Municipal Systems Act and the environmental management principles in the NEMA form the statutory mandate for municipal involvement in renewable energy projects and the provision of this basic need to communities.

b. Statutory Constraints: Municipal Finance Management Act ('MFMA')

Whether a Municipality seeks to issue climate bonds in order to provide cheap funding to renewable energy projects, or to embark on such projects itself, the MFMA contains a number of procedural constraints to such Municipal activity. Section 33 provides that contracts which impose financial obligations on municipalities for a period longer three years must, at least 60 days before the meeting of the Municipal Council at which the contract is to be approved, be made open for public comment; and the views and recommendations of the following institutions must be solicited: the National Treasury, the relevant provincial treasury, the Ministry of Cooperative Governance and Traditional Affairs, and regarding renewable energy projects, the Ministry of Energy.¹⁸⁶

Furthermore, s 46 of the MFMA regulates the incurrence of long term debt for the financing of capital expenditure by Municipalities; it contains similar public participation and institutional consideration requirements to s 33.¹⁸⁷

From the above, it is evident that a complicated procedure must therefore be followed before municipal climate bonds can be issued. Politics is another barrier to their issuance: service-delivery projects with more immediate benefits than renewable energy

¹⁸⁴ National Environmental Management Act supra s 2(3).

¹⁸⁵ Ibid s 2(4)(a)(ii).

¹⁸⁶ Municipal Finance Management Act 56 of 2003 s 33.

¹⁸⁷ Lisa Thompson-Smeddle (Ed) op cit note 178 at 94.

projects might be prioritized by Municipal councilors in order to gain political support.¹⁸⁸ Another political obstacle, which has more to do with the nature of political office than personal motives, is that renewable energy initiatives might not being followed through if their proponents are not re-elected to office.

(v) *Public entity climate bonds*

A public entity climate bond would be a bond issued by a major public entity such as Eskom, DBSA or the Central Energy Fund. Such entities, acting through their accounting authority, may borrow money that binds or may bind that public entity to any future financial commitment.¹⁸⁹

Eskom bonds, issued under its Domestic Multi-Term Note Programme (DMTN), are basically energy bonds.¹⁹⁰ The proceeds of the bond issue are to be used, *inter alia*, to upgrade Eskom's electricity generation, transmission and distribution capabilities.¹⁹¹ The Minister of Public Enterprises, in concurrence with of Minister of Finance, guaranteed the Eskom energy bonds, thereby making them investment grade.¹⁹²

Eskom's bond issue and the government guarantees that it obtained can be used as an example for other public entities, banks and other financial institutions to cooperate with the government for the issuance of climate bonds: a banks could issue a climate bond, secured by a government guarantee which would make it investment grade, and the money raised could then be on-lent to renewable energy projects at favorable rates. Eskom itself should issue climate bonds rather than bonds that further advance its carbon intensive operations.

(vi) *Climate bonds conclusion*

¹⁸⁸ Ibid 93.

¹⁸⁹ Public Finance Management Act supra s 66 (3)(a).

¹⁹⁰ Parliamentary Monitoring Group 'QUESTION NO 216: Mr. D C Ross (DA) to ask the Minister of Public Enterprises: the reply'. Last accessed from <http://www.pmg.org.za/node/34186> on 2 February 2013.

¹⁹¹ Ibid.

¹⁹² Eskom 'Bonds: Government Guarantees'. Last accessed from <http://www.eskom.co.za/c/88/bonds/> on 6 February 2013. A cabinet member, with the written concurrence of the Minister may issue a guarantee which binds the National Revenue Fund in respect of a financial commitment incurred or to be incurred by the national executive. Such a guarantee would constitute a direct charge against the National Revenue Fund; and any payment made on its terms must in the first instance be defrayed from the funds budgeted for the department concerned – Public Finance Management Act supra s 70.

Climate bonds are an attractive way in which the National Government, local government, public entities and financial institutions can raise large amounts of funding which can be used to finance renewable energy projects. Climate bonds that bind the National Treasury would be attractive to investors because they are a safe bet. However National government climate bonds seem to have the onerous requirement that their issuance requires a special resolution of the National Assembly – this is one barrier to this form of finance. Municipal bonds might be easier to issue but there are procedural complications and political barriers to this option. Although Public Entity climate bonds, and those issued by financial institutions, cannot bind the National Treasury, government guarantees can be incorporated to serve this function and make them attractive investments. Furthermore they seem to be easier to issue than the first two options considered.

All possible options should be explored to create an enabling environment for renewable energy generation and to mitigate the risk of catastrophic climate change. However, regarding climate bonds, given the issues identified above, public entity bonds like those issued by Eskom, or bonds issued by financial institutions seem to be the best option as long as there is cooperation from all spheres: the government, institutional investors, financial institutions and project companies.

The proceeds of the issuance of climate bonds could be on lent to renewable energy project developers; or if the issuing institution has the capacity, like Eskom, to build own and operate a renewable energy power plant, then such institution may use the proceeds likewise.

4.4 Public offers

A project developer can raise funds for the development or expansion of a renewable energy project by offering shares in the project company to the public. Subscribers will hope that the company will make profits which will be distributed to them as dividends; and that the value of shares will rise so that, when they are eventually sold, they will make a profit on the sale. For the project developer, a public offer is a way to raise funds without incurring debt and having to make mandatory interest payments; but it also comes with the risk of a loss of control and less freedom in management.

Shares can be sold to the public simply by making the shares available to the public or by obtaining a listing on the Johannesburg Stock Exchange ('JSE'). Both types of offers require compliance with the provisions of the Companies Act.¹⁹³ Obtaining a listing on the JSE further requires that the offer satisfies the listings requirements of the JSE. In China many renewable energy companies have been listed on the Shanghai and Shenzhen Stock Exchanges;¹⁹⁴ this compares to none in South Africa.

One of the most important requirements for public offers stated in the Companies Act is that the offer must be accompanied by a registered prospectus.¹⁹⁵ Public offers have the potential for abuse; offeror's may want to trick members of public into paying for shares in a worthless company; or paying excessive money for shares by exaggerating the profit-making prospects of a company. The prospectus requirement serves to protect members of the public against such unscrupulous behavior. A prospectus ensures that the information provided by the company making the offer, with regard to its prospects, is adequate and accurate. A valid prospectus must contain all information that an investor may reasonably require to assess the financial position and prospects of a company, the securities offered and rights attached to them.¹⁹⁶

Obtaining a listing on a stock exchange requires a lot of time, commitment and it is expensive.¹⁹⁷ Furthermore, in the context of the government's REIPPP programme, being selected as a preferred bidder during a bidding window is not guaranteed. A company might obtain a listing only to find that it is not selected as a preferred bidder. If a company tries to obtain a listing after being selected as a preferred bidder then the listing process might delay the project and it might not be able to reach financial close in time for the PPA's to be concluded with all preferred bidders.¹⁹⁸

¹⁹³ Companies Act supra Chapter 4.

¹⁹⁴ H Liming 'Financing rural renewable energy: A comparison between China and India' *Renewable and Sustainable Energy Reviews* 13 (2009) 1096–1103 at 1101.

¹⁹⁵ Companies Act supra s 99 (2).

¹⁹⁶ *Ibid* s 100(1)

¹⁹⁷ BVCA *A Guide to Private Equity* 47. Last accessed from <http://www.bvca.co.uk/assets/features/show/AGuidetoPrivateEquity2010> on 2 December 2012.

¹⁹⁸ Financial closure is the point at which there exists a legally binding commitment from equity holders or debt financiers to provide or mobilize funding for a project. The funding must account for a significant part of the project cost, securing the construction of the facility. Last accessed from http://ppi.worldbank.org/resources/ppi_faqs.aspx on 1 February 2013.

If a REFIT model was adopted in South Africa (as proposed in Chapter 2), public offers by obtaining a listing on a stock exchange would be a viable option because there would be no bidding windows and no time periods before which financial close would have to be met in order to conclude a PPA. Under the current REIPPPP model, the preferable form of public offer is to offer shares to the public without obtaining a listing.

Public offers are attractive not only for their ability to raise funds but also because they can facilitate the involvement of public and private entities, individuals and communities in the renewable energy revolution. Take for instance a public offer in which the Government Employees Pension Fund is a subscriber: this would indirectly include 1.2 million extra South Africans in the fight against catastrophic climate change. It is submitted that public offers are wonderful way to bring many more people on board in the fight against catastrophic climate change. It is hoped that in the future project developers will utilize this financing route more than they do now.

4.5 Tax opportunities

(i) Introduction

Sound tax planning can save a project developer some money but it can also determine whether a project is financially viable or not. Sound tax planning is therefore an important consideration in the financing of renewable energy projects. The Income Tax Act and the Customs and Excise Act both contain provisions which incentivize investment in renewable energy. Their provisions are detailed in this section. Although the tax benefits currently available for renewable energy projects are encouraging for investors and project developers, and will assist in the development of the renewable energy industry and the mitigation of catastrophic climate change, more tax incentives can be provided, particularly Value Added Tax ('VAT') exemptions.

(ii) Deduction in respect of certain machinery, plant, implements, utensils and articles used in production of renewable energy

A taxpayer who owns an asset, or acquires an asset as purchaser in an installment credit agreement, or makes improvement to an asset (other than repairs), which was or is brought into use for the first time by that taxpayer for the purpose of his or her trade to

be used by that taxpayer in the generation of renewable energy, is entitled to a 100 per cent deduction - divided over the course of three years – on the cost of the asset.¹⁹⁹

The renewable energy assets that qualify for this deduction are machinery, plant, implements, utensils and articles used in production of renewable energy.²⁰⁰ The qualifying renewable energy technologies are hydropower (of not more than 30 MW) or assets used in the generation of electricity from wind, sunlight, or biomass.²⁰¹

In respect of the first year of assessment during which the asset is brought into use, 50 per cent of the cost of the assets shall be allowed as a deduction; in respect of the second year, 30 per cent of such cost; and in respect of the third year, 20 per cent of such cost.²⁰²

(iii) Exemption of certified emission reductions

Amounts received by a taxpayer for the sale of carbon credits generated by a qualified Clean Development Mechanism project are exempt from income tax.²⁰³ Therefore, renewable energy project developers that are able to generate carbon credits (as discussed in section 4.2 above) from their projects can make use of this exemption.

(iii) VAT and Customs Duty

Both renewable energy equipment sourced locally and equipment imported into South Africa will be subject to the Value Added Tax ('VAT') at the standard rate of 14 per cent in terms of s 7 of the VAT Act.²⁰⁴ Customs Duty is however not chargeable on renewable energy equipment. Schedule 1, part 1, s xvi to the Customs and Excise Act provides that such equipment may be brought into South Africa freely.

China offers tax breaks from VAT for imported renewable energy equipment.²⁰⁵ In China the standard rate of VAT is 17 per cent; whereas VAT for biogas, wind power, small hydro and power generation from municipal solid waste is only 3 per cent, 8.5 per

¹⁹⁹ Income Tax Act supra s 12B(1)(h) read with s 12B(2).

²⁰⁰ Ibid s 12B(1)(h).

²⁰¹ Ibid.

²⁰² Ibid s 12B(2).

²⁰³ Ibid s 12K(2)

²⁰⁴ Value Added Tax Act 89 of 1991

²⁰⁵ H Liming op cit note 194 at 1099.

cent, 6 per cent, and 0 per cent respectively.²⁰⁶ In India, the VAT on renewable energy equipment is also lower than the normal rate.²⁰⁷ The government of South Africa must also initiate VAT tax breaks for renewable energy assets that generate electricity in South Africa. This is another measure that would further encourage investment in renewable energy and advance the renewable energy revolution.

(iv) Conclusion

VAT tax breaks for renewable energy projects would further encourage investment in renewable energy. Project developers can however make use of the deductions for the cost of renewable energy assets, the carbon credit exemption, and the customs duty exemption provided for in the Income Tax Act and the Customs and Excise Act. Sound tax planning can save a project developer some money; and it can determine the viability of a renewable energy project. It is not so much an alternative financing scheme but a necessity.

4.6 Conclusion

There are many alternative forms of finance for renewable energy projects. Securitisation can be considered as a form of finance that can be used to channel cheap debt to a project at favorable rates. Strict conditions, stated in the Securitisation Notice, serve to ensure that investors are adequately protected. This regulatory framework also gives comfort to investors and encourages them to put their money into such schemes. Public offers can also be used to channel funds to renewable energy projects. Offering shares to the public without obtaining a listing might be the only feasible form of public offer under the current REIPPPP model. The prospectus requirements in the Companies Act serve to protect investors and make them comfortable with this form of finance. The sale of carbon credits is another form of funding; albeit limited because the carbon market is volatile and carbon finance often does not influence the decision to invest; and furthermore, relatively speaking, renewable energy projects do not generate many carbon credits. The requirements of the Marrakesh Accords and the Director-General of the Department of Minerals and Energy as the DNA must be satisfied in order to employ

²⁰⁶ Ibid.

²⁰⁷ Ibid.

this form of finance. Climate Bonds are another alternative for renewable energy finance. It has been suggested that bonds issued by public entities and financial institutions would be the easiest bonds to issue and therefore the preferable option but cooperation from all spheres is required to ensure that the climate bonds issued are investment grade, that they are subscribed to and importantly, that the renewable energy industry is accessible and supported. The renewable energy tax deductions and exemptions certainly incentivize investment in such projects and may determine the financial viability of a project. However more can be done in the form of VAT tax breaks.

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CHAPTER 5

CONCLUSION

This paper has prescribed measures that can be adopted to foster greater participation in the renewable energy industry, reduce carbon emissions and help address the current energy crisis through its focus on two barriers to renewable energy generation: regulations and finance. The measures proposed are the abandonment of the current REIPPPP program which restricts participation in the renewable energy industry, and the adoption of the REFIT program which provides open access to the national grid as long as certain criteria are satisfied. Both REFIT and REIPPPP are provided for in the Electricity Regulations on New Generation Capacity. However the adoption of REFIT would require the Minister of Finance to give the DoE exempt status from the provisions of the Preferential Procurement Policy Framework Act. This has not happened and so the growth of the renewable energy revolution is currently restricted to bidding windows.

The second barrier to renewable energy generation that has been identified by this paper is finance. The paper has recommended the use of project finance as the legal structure that can be used to overcome this barrier. This is mainly because of the numerous benefits that come with the separate existence of the SPV including the capacity for plural ownership, increased debt capacity and insolvency remoteness. Various security arrangements which protect and thereby encourage investors to participate in this financing scheme were also considered. The paper also suggested that the SPV should take the form of a company. This gives the SPV the ability to employ equity finance and is of benefit to the project developer it maximizes the funding capacity of the project; and it is also of benefit to equity investors because dividends are subject to a lower rate of tax than the income tax that would be charged to tax beneficiaries if a Trust SPV were to be used.

Alternative forms of finance for renewable energy projects were also discussed. Securitisation was presented as financing scheme by which debt can be raised at cheaper rate than commercial bank rates. The manner in which the securitisation regulations protect and encourage investors was also discussed in detail. Carbon finance was presented as another alternative, which can be considered as a 'free' source of funds for renewable energy projects; its legal requirements and its limitations were examined. Public offers were also discussed as an underutilized alternative

for the financing of renewable energy projects; however, they are unlikely to take the form of a listing on the stock exchange. The prospectus requirements in the Companies Act were considered as constituting the regulatory machinery by which investors are protected. It was also stated that public offers constitute an attractive way in which to involve the greater public in the renewable energy revolution. Lastly, good tax planning was presented as necessary way in which to finance renewable energy projects. The exemption of moneys received for carbon credits from income tax, the deductibility of the full cost of renewable energy assets, and the exemption of renewable energy assets from customs duty, must be taken full advantage of. However, more can be done by the government in the form of VAT tax breaks.

‘Listening to most mainstream investment commentators, economists and business journalists one might get the sense that much of what we are currently witnessing in global markets is simply a temporary-albeit rather persistent- economic downturn before we revert back to business (and growth) as usual.

For other observers ... the current volatility is not simply symptomatic of recession, but signals something far more profound: the beginning of an era of creative destruction. On a finite planet, an economic system that seeks unlimited growth based primarily on extractive resources and funded by debt cannot be sustained indefinitely.’²⁰⁸

‘Climate change affects the entire globe. Action now to reduce emissions is critical ... [we] must start now on adapting our economy and society to these changes.

Adaptation involves taking action to minimize the negative impacts of climate change and taking advantage of new opportunities that may arise. Increasing our capacity to adapt reduces our vulnerability to the effects of climate change. However, we must start planning our adaptive responses now; by doing so, we may help to lessen some of the environmental, economic and social costs of climate change.’²⁰⁹

Catastrophic climate change makes it imperative that we abandon pollutive energy projects and invest in renewable energy. It is the poorest countries of the world that will be most vulnerable to the impacts of climate change – the African continent is on the frontline. The renewable energy revolution has already begun in South Africa; this is evident from the policy and legislative framework that is in place and private sector participation in REIPPPP. However new coal projects such as Eskom’s Kusile power station must not be supported. Radical and pervasive change is needed. Eskom and other such polluters can and should be held accountable for their pollutive projects. They should be taken to court to face the law. Perhaps this is the drastic step that is needed to quicken the revolution. It has been argued that there is a legal and a moral

²⁰⁸ Jonathan Hanks ‘To boldly go...’ Business Day Earth Magazine Supplement 2012 p 19

²⁰⁹ The Great Warming op cit note 8.

obligation to choose renewable energy. Although this paper was focused on project developers and overcoming their financial and regulatory barriers to renewable energy generation, this obligation rests on everyone: the government, public and private entities, individuals and communities; everyone must join the revolution.

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