

**Regulating green bonds as a driver for
environmentally responsible investment in the
South African energy sector**

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ABSTRACT

Human economic activity through production processes and overuse of fossil fuels have unequivocally caused the negative impacts of climate change, producing green bonds critical threats to sustainability and thus necessitating the investment into low carbon and resilient infrastructure such as renewable energy to mitigate rising temperatures. The aim of the study is to determine how green bonds should be regulated and governed in South Africa in order for green bonds to facilitate environmentally responsible investment in the country's energy sector, taking learning points from foreign jurisdictions. An examination of the theoretical and conceptual background on the relationship between climate change and mobilised finance is made, with green bonds providing the basis of this study as an environmentally responsible, effective investment and response mechanism to the impacts of climate change at the global level. An exposition of the international and regional law governance frameworks related to climate change, climate finance, environmental social governance, green bonds and other financial instruments are analysed in order to distil guidelines for the governance of green bonds within the South African legal context. The South African legal framework is addressed in the context of how current regulations act as drivers for environmentally responsible investment in the energy sector and how such regulations provide for green bonds as a financial mechanism. An analysis and discussion of the position in Nigeria, Kenya and the United Kingdom in relation to climate change regulation and green bonds follows as a means of addressing the gaps or deficiencies identified in South African law and providing remedial action.

The finding of this study is that green bonds are not regulated in South African legislation, except for listing requirements on the Johannesburg Stock Exchange. There is legislation that can be utilised to facilitate the introduction green bonds. A strong legal framework will catalyse the growth of green bonds and protect the interests of investors. Some of the recommendations include that harmonisation of green bonds should include both market regulation and national policy into a single framework to avoid confusing issuance thereof. There are several voluntary instruments such as the Green Bond Principles, Green Bonds Standard and the draft

ISO 14030-1 that could be incorporated into South African regulation on green bonds. The recommendation is made that a regulatory framework for green bonds should be introduced through new legislation, existing legislation (by way of regulation) or to be included into the draft *Climate Change Bill*, 2018. The recommendations set out the framework for such regulation.

Keywords: Climate change finance, legal framework, green bonds, South Africa, Nigeria, Kenya, United Kingdom, climate change, environmental social governance

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LIST OF ABBREVIATIONS

ABS	Asset-backed securities
ACCF	African Climate Change Fund
ACliFF	Asia-Pacific Climate Finance Fund
ACPC	African Climate Policy Centre
ADF	Asian Development Fund
AF	Adaptation Fund
African HRLJ	African Human Rights Law Journal
African J Bus Eth	African Journal of Business Ethics
African Rev of Eco and Fin	African Review of Economics and Finance
AGN	African Group of Climate Change Negotiators
AIF	ASEAN Infrastructure Fund
AJPHRD	African Journal for Physical Health Education, Recreation and Dance
AMCEAN	African Ministerial Conference of the Environment
American JIL	American Journal of International Law
AOSIS	Alliance of Small Island States
APCF	Asia Pacific Carbon Fund
AU	African Union
BASA	Banking Association of South Africa
BASIC Countries	Brazil, South Africa, India and China
BISQR	Bank for International Settlements Quarterly Review
BoI	Bank of Industry
BRICS	Brazil, Russia, India and China
Brooklyn J Corp Fin & Com L	Brooklyn Journal of Corporate, Financial and Commercial Law
CAHOSCC	Committee of African Heads of State and Government on Climate Change
CAHOSCC	Conference of African Heads of State and Government
CAT	Climate Action Tracker

CBDR	common but differentiated responsibilities
CBI	Climate Bonds Initiative
CBI	Climate Bonds Initiative
CBN	Central Bank of Nigeria
CBS	Climate Bonds Standard
CCC	Climate Change Committee
CCES	Centre for Climate and Energy Solutions
CCF	Climate Change Fund
CCLR	Carbon and Climate Law Review
CLSC	Crime Law and Social Change
CCSO	Carbon Capture and Sequestration
CDM	Clean Development Mechanism
CEFPF	Clean Energy Financing Partnership Facility
CER	Centre for Environmental Rights
CIEL	Center for International Environmental Law
CIF	Climate Investment Funds
CMA	Capital Markets Authority
CoGTA	Cooperative Governance Traditional Affairs
COP	Conference of the Parties
CPI	Climate Policy Initiative
CRISA	Code for Responsible Investing in South Africa
CSIR	Council for Scientific and Industrial Research
CSP	concentrated solar power
DEA	Department of Environmental Affairs
Deakin LR	Deakin Law Review
DEAT	Department of Environmental Affairs and Tourism
DMO	Debt Management Office
DNT	Department of National Treasury
DOE	Department of Energy
EC	European Commission
ECA	Environment Conservation Act
EEA	European Environment Agency

EEA	European Environment Agency
EEEDM	Energy Efficiency and Energy Demand Management
EJRSE	Eurasian Journal of Researches in Social and Economics
EL	Environmental Law
ELM	Environmental Law and Management
ELR	Environmental Law Review
EM	Environmental Management
Environ Res Lett	Environmental Research Letters
EPFIs	Equator Financial Institutions
ERC UCT	Energy Research Centre UCT
ERGP	Economic Recovery and Growth Plan
ERISA	Employee Retirement Income Security Act
ESG	Environmental, Social and Governance
ESI	Employee State Insurance
EU ETS	European Union Emissions Trading Scheme
EU GBS	European Union Green Bond Standard
FEPA	Federal Environmental Agency
FGN	Federal Government of Nigeria
FMA	Financial Markets Act
FMO	Africa and the Dutch Development Bank
FSB	Financial Services Board
FSD	Financial Sector Deepening
FSR Act	Financial Sector Regulation Act
FTSE Russell	Financial Times Stock Exchange Russell
FUJOPIA	Journal of Politics and International Affairs
GBAs	Green Bond Assessments
GBP	Green Bond Principles
GBPK	Kenya Green Bond Programme
GCCI	Global Climate Change Initiative
GCF	Green Climate Fund
GCPF	Global Climate Partnership Fund

GDP	gross domestic product
GEF	Global Environment Facility
GEPF	Government Employees Pension Fund
GER	Global Economic Review
GESIP	Green Economy Strategy and Implementation Plan
GGA	Global Goal for Adaptation
GHG	greenhouse gas
GRI	Global Reporting Initiative
GLI	Global Legal Insights
GNESD	Global Network on Energy for Sustainable Development
GPSA	Global Partnership for Social Accountability
GRI	Global Reporting Initiative
GW	Gigawatt
GWC	growth without constraints
ICCC	Inter-Ministerial Committee on Climate Change
ICF	International Climate Fund
ICMA	International Capital Market Association
IEA	International Energy Agency
IFC	International Finance Corporation
IFRS	International Financial Reporting Standards
IIARF	Institute of Internal Auditor's Research Foundation
IIRC	International Integrated Reporting Council
IJCA	International Journal of Critical Accounting
IJCCSM	International Journal of Climate Change Strategies and Management
IJCIP	International Journal of Critical Infrastructure Protection
IJDS	International Journal of Development and Sustainability
IKI	International Climate Initiative
IMF	International Monetary Fund

INDC	Intended Nationally Determined Contribution
Int'l & Comp LQ	International and Comparative Law Quarterly
Int'l Environ Agreements	International Environmental Agreements: Politics, Law and Economics
Int'l Rev Environ Strat	International Review for Environmental Strategies
IoDSA	Institute of Directors South Africa
IPCC	Intergovernmental Panel on Climate Change
IPP	Independent Power Producer
IPPs	Independent Power Producers
IPS	Investment Policy Statement
IRENA	International Renewable Energy Agency
IRP	Integrated Resource Plan
ISO	International Organization for Standardization
ISS	Institute for Security Studies
J Appl Corp Finance	Journal of Applied Corporate Finance
J Environ Earth Sci	Journal of Environment and Earth Science
J Sustain Finance Invest	Journal of Sustainable Finance and Investment
JAL	Journal of African Law
JBE	Journal of Business Ethics
JEL	Journal of Environmental Law
JELL	Journal of Environmental Law and Litigation
JENRL	Journal of Energy and Natural Resources Law
JESA	Journal of Energy in Southern Africa
JICL	Journal of International and Comparative Law
JL Pol'y & Globalization	Journal of Law Policy and Globalization
JSDLP	Journal of Sustainable Development Law and Policy
JSE	Johannesburg Stock Exchange
JSFI	Journal of Sustainable Finance and Investment
JTEL	Journal of Transnational Environmental Law
JWELB	Journal of World Energy Law and Business
KBA	Kenya Bankers Association
Kenya ELR	Kenya Environmental Law Review

KPIs	Key Performance Indicators
LDCF	Least Developed Countries Fund
LDCs	Least Developed Countries
LSEG	London Stock Exchange Group
LTM	Long-Term Mitigation Scenario
Max Planck UNYB	Max Planck Yearbook of United Nations Law
MBS	Mortgage-Backed Securities
MDA's	Ministries Departments and Agencies
MDGs	Millennium Development Goals
MEAs	Multilateral Environmental Agreements
MFMA	Municipal Finance Management Act
Modern LR	Modern Law Review
MoU	Memorandum of Understanding
MRV	Monitoring, Reporting and Verification
MW	Megawatt
NAMA facility	Nama Appropriate Mitigation Action facility
NAPAs	National Adaptation Programmes of Action
NASPA-CCN	National Adaptation Strategy and Plan of Action on Climate Change for Nigeria
NASREA	National Environmental Standards and Regulations Enforcement Agency (Establishment) Act
NCCPRS	National Climate Change Policy and Response Strategy
NCCRS	National Climate Change Response Strategy
NCCS	National Climate Change Strategy
NCIFI	International Climate Forest Initiative
NDC	Nationally Determined Contribution
NDCs	nationally determined contributions
NDP	National Development Plan
NEM:AQA	National Environmental Management Act: Air Quality Act
NEMA	National Environmental Management Act

NFSD	National Framework on Sustainable Development
NGOs	Non-Governmental Organisations
NNPC	Nigerian National Petroleum Corporation
NPC	National Planning Commission
NRE	Natural Resources and Environment
NS	North South Power (
NSCCTF	National Strategic Climate Change Trust Fund
NSE	Nairobi Securities Exchange
OAGF	Office of the Accountant General of the Federation
ODA	official development assistance
OECD	Organisation for Economic Co-operation and Development
OPEC	Organisation of the Petroleum Exporting Countries
OTC	over the counter
PELJ	Potchefstroom Electronic Law Journal
PGN	Policy Guidance Note
PPP	Public Private Partnerships
PRI	Principles for Responsible Investment
QELRO	quantified emissions limitation and reduction objectives
QUERLO	quantified emission limitation and reduction commitments
R and D	Research and Development
RBS	required by science
RBS	Revised Balanced Scenario
RE	Renewable Energy
RECs	Regional Economic Communities
REIPPPP	Renewable Energy Independent Power Producer Programme
REM	REDD Early Movers
RI	Responsible Investing
RMBS	residential MBS

ROI	return on investment
SA Merc LJ	SA Mercantile Law Journal
SAJELP	South African Journal of Environmental Law and Policy
SAJEMS	South African Journal of Economic and Management Sciences
SAJHR	South African Journal on Human Rights
SAJS	South African Journal of Science
SANEDI	South African National Energy Development Institute
SASB	Sustainability Accounting Standards Board
SBI	Subsidiary Body for Implementation
SBM	Sustainable Bond Market
SBN	Sustainable Banking Network
SBP	Social Bond Principles
SBSTA	Subsidiary Body for Scientific and Technological Advice
SCCF	Special Climate Change Fund
SDGs	Sustainable Development Goals
SEBI	Securities Exchange Board of India
SEC	Securities and Exchange Commission
SEMS	Social and Environmental Management System
SGP	Small Grant Program
SLBP	Sustainability-Linked Bond Principles
SLBs	Sustainability-Linked Bonds
SPCF	Special Climate Change Fund
SPTs	Sustainability Performance Targets
SPV	special purpose vehicles
SSE	Sustainable Stock Exchange
Stanford JIL	Stanford Journal of International Law
Stell LR	Stellenbosch Law Review
Strathmore LR	Strathmore Law Review
TCFD	Task Force on Climate-related Financial Disclosures

TEG	Technical expert group on sustainable finance
Tilburg LREL	Tilburg Law Review-Environmental Law
TNA	Technology Needs Assessment
Tulane ELJ	Tulane Environmental Law Journal
Tulsa LR	Tulsa Law Review
UBJPPL	Journal of Private and Property Law
UCLJLJ	UCL Journal of Law and Jurisprudence
UN PRI	United Nations Principles for Responsible Investing
UN REDD	United Nations Program on Reducing Emissions from Forest Degradation
UNCC	United Nations Climate Change
UNDP	United Nations Development Programme
UNEP FI	United Nations Environment Programme Finance Initiative
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNGA	United Nations General Assembly
UNPRI	UN Principles for Responsible Investing
USA	United States of America
Vermont JEL	Vermont Journal of Environmental Law
Vermont LR	Vermont Law Review
Villanova ELJ	Villanova Environmental Law Journal
WCED	World Commission on Environment and Development
WCWDM	Water Conservation and Demand Management
WEC	World Energy Council
Yale JIL	Yale Journal of International Law

Chapter 1

Introduction

1.1 Background

Climate change is arguably one of the most arduous and pressing issues of our time, with recent research demonstrating that "the magnitude and rapidity of observed changes frequently exceed the estimates of earlier projections".¹ The main reason for global concern is that negative impacts of unmitigated climate change are based on unequivocal human activities which will have catastrophic consequences on the climate and economic activities, affecting developing countries more so. The Fifth Assessment Report (2014) of the Intergovernmental Panel on Climate Change (IPCC) stated that climate change is indisputably linked with human activity.² This dominant human activity has moved the planet from the stable Holocene to the new geological era now known as the Anthropocene.³ Since the Industrial Revolution Human anthropogenic activity has influenced a rise in greenhouse gas (GHG) emissions with increases largely as a result of burning fossil fuels and biomass to drive industry and expanding populations.⁴ The vast majority of global GHG emissions are as a result of coal fired power plants which generate 84 percent of the global total of emissions as reported by the International Energy Agency (IEA).⁵ Sub-Saharan Africa is the most vulnerable to climate change and climate variability having had the least contribution to the global growth of GHG and the impacts of climate change which will affect human development, income and the environment on the continent.⁶ This vulnerability is primarily as a result of a combination of weak governance structures, low adaptive capacity and socio economic conditions.⁷ Confirmation of this rapid

¹ Somerville "Science, politics, and public perceptions of climate change" 4.

² IPCC 2014 <https://www.ipcc.ch/report/ar5/> 36.

³ IPCC 2018 <https://www.ipcc.ch/sr15/chapter/glossary/> 53. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty.

⁴ Mwebaza and Kotzé 2009 *ISS* 172.

⁵ Roux, Lloyd and Zeelie 2014 *Africa Insight* 22.

⁶ Nkomo, Nyong and Kulindwa "The impacts of climate change in Africa" 8.

⁷ ACPC 2013 <https://www.unclearn.org/wp-content/uploads/library/uneca21.pdf> 1.

climate change is seen in the latest report by the IPCC's Special Report on Global Warming of 1.5° Celsius which confirms that the earth has already warmed by 1° Celsius in 2017, an increase of 0.2° Celsius.⁸

The United Nations Convention Framework on Climate Change⁹ (UNFCCC) ratified by 197 countries, known as the Parties to the Convention, has under Article 2 as its main objective

... the stabilisation of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a time frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner.¹⁰

Article 4 of the UNFCCC states that in achieving the ultimate objective of the Convention

... developed country Parties and other developed Parties included in Annex II shall take all practicable steps to promote, facilitate and finance, as appropriate, the transfer of, or access to, environmentally sound technologies and know-how to other Parties, particularly developing country Parties, to enable them to implement the provisions of the Convention.¹¹

To achieve the objectives of the UNFCCC, and the ambitious goals which might not in themselves be enough, it was realised early on that there was a need to reduce GHG emissions, improve the efficiency of production processes, reduce energy intensity in production processes, and developing countries would be required to align their production with environmental objectives.¹² The *Paris Agreement*¹³ was an important milestone in climate change politics, the global community in reaching this consensus had rarely agreed on a single topic in the manner in which nearly 197

⁸ IPCC 2018 <https://www.ipcc.ch/sr15/chapter/glossary/>.

⁹ FCCC/INFORMAL/84 GE.05-62220 (E) 200705 of 1992 – entered into force on 21 March 1994.

¹⁰ UNFCCC Article 2(a).

¹¹ UNFCCC Article 4.5.

¹² Romano *et al Climate Finance* 4.

¹³ Entered into force 4 November 2016 – United Nations C.N.735.2016. TREATIES-XXVII.7.d.

countries all agreed that human activity was causing climate change. To meet the below stated *Paris Agreement* of:

... holding the increase in the global average temperature to well below 2° C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5° C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change.¹⁴

It would require the substantial replacement of fossil fuels with renewable energy, greater efficiency in both production and consumption of energy, a slowdown in global economic growth and a reduction of population.¹⁵ The path towards this low GHG emission as espoused in the *Paris Agreement* and climate-resilience required, would demand a consistent finance pathway financing low carbon and green infrastructure.¹⁶ Parties would be required to lead in the global mobilisation of "climate finance"¹⁷ from a wide variety of sources, instruments and channels, noting the significant role of public funds, through a variety of actions, including country-driven strategies. Such mobilisation of climate finance should represent a progression beyond previous efforts."¹⁸ Effective climate action requires climate finance access which would provide technology development and deployment, as well as capacity building of competent skills to meet the challenges of mitigation and adaptation strategies.¹⁹

Whilst the capital markets are the logical and sustainable place to seek out the substantial amounts of capital required to finance the low carbon and climate resilient economies, the legal framework necessary for energy development needs to be enabling to allow for energy investment.²⁰ The UNFCCC recognised the issuance of

¹⁴ *Paris Agreement* Article 2.

¹⁵ Romano *et al Climate Finance* 20.

¹⁶ *Paris Agreement* Article 2(c).

¹⁷ Climate finance is not an environmental law concept but rather a concept flowing from sustainable development law.

¹⁸ *Paris Agreement* Article 9(3).

¹⁹ *Paris Agreement* Article 11(1).

²⁰ IRENA 2017 <http://www.irena.org/publications/2017/Oct/Electricity-storage-and-renewables-costs-and-markets> 23. Renewable energy costs have drastically fallen over the last several years

green bonds as climate action, providing a platform for which corporates and governments can leverage their mitigation and adaption efforts.²¹ Experts already predict that 30 percent of infrastructure investment will be financed by bonds and this will predominantly be through corporate bonds, municipal bonds and infrastructure bonds.²² Green bonds are on the rise as a funding mechanism of low carbon and resilient economies.

1.2 Green bonds

A green bond is regarded as one of several financial instruments to raise climate finance for mitigation and adaptation purposes and can also be viewed as a tool to implement low carbon infrastructure through the *Paris Agreement*.²³ The first green bond had as its core mandate six action areas, namely to support climate actions in country-led development processes; mobilise additional concessional and innovative finance; facilitate the development of market-based financing mechanisms; leverage private sector resources; support accelerated development and deployment of new technologies; and step-up policy research, knowledge and capacity building.²⁴

Green bonds do not have a universally accepted definition (hence why they need regulation) but some of the notable definitions are from the Centre for International Climate and Environmental Research, based in Oslo, which states that:

A Green Bond is a fixed income financial instrument issued with the aim of financing climate or environmentally friendly projects. A fixed-income instrument is a debt instrument where the issuer is obliged to pay back the money on a schedule

in part driven by technological advancements, a strong business case and new financing models. A scaling up of renewable energy investments in developing countries is required because of the potential exponential growth that is foreseeable. Public and Private sector finance will be required for this transition to green technologies and new financial mechanisms will be crucial to this rapid growth. Structured finance and standardisation of projects as well as documentation can create mechanisms for the securitisation of renewable energy assets thus leading to Green Bonds which have the capacity to open up capital markets.

²¹ OECD 2015 [https://www.oecd.org/environment/cc/Green%20bonds%20PP%20\[f3\]%20\[lr\].pdf](https://www.oecd.org/environment/cc/Green%20bonds%20PP%20[f3]%20[lr].pdf).

²² CBI date unknown <https://www.climatebonds.net/resources/publications/scaling-green-bond-markets-sustainable-development>.

²³ UNFCCC 2016 <https://unfccc.int/news/green-bonds-a-low-carbon-economy-driver-after-cop21>; Paris Agreement on Climate Change 2016 <http://www.dirco.gov.za/docs/2016/un1102.htm> (hereafter the *Paris Agreement*).

²⁴ World Bank Group 2012 <http://documents.worldbank.org/curated/en/732681468150874549/Development-and-climate-change-a-strategic-framework-for-the-World-Bank-Group>.

according to the terms of the bond. The issuer agrees to repay the bond plus a rate of return over a certain period.²⁵

The International Finance Corporation defines green bonds as:

Fixed-income securities, both taxable and tax exempt, that raise capital for use in projects or activities with specific climate or environmental sustainability purposes. These bonds are structured the same way as standard bonds, with the same characteristics as standard bonds in terms of seniority, rating, execution process and pricing, but with proceeds dedicated to climate or environmental projects. The bonds carry the same rating as an issuer's other debt and are often structured under the issuer's medium term notes programs. With a few exceptions, the bonds are backed by the issuer's entire sheet balance so that investors are not exposed solely to the risk of the bond's underlying projects.²⁶

The World Bank defines a green bond as "debt security that is issued to raise capital specifically to support climate related or environmental projects",²⁷ while the International Capital Market Association defines it as "any type of bond instrument where the proceeds will be exclusively applied to finance or re-finance in part or in full new and/or existing eligible Green Projects which follows the four Green Bond Principles".²⁸ From the above can be deduced that green bonds are (a) debt instruments; (b) structured for environmental or climate sustainability purposes; (c) have four core components (i) which are uniqueness in their use of proceeds component, (ii) have a process for project evaluation, (iii) have a management of proceeds process, and (iv) a reporting structure; (d) have a scheduled repayment plan; and (e) are utilised for sustainable development and the introduction of low carbon infrastructure.

²⁵ CICERO 2016 <https://www.cicero.oslo.no/en/posts/single/CICERO-second-opinions> 8.

²⁶ IFC 2016 <https://www.ifc.org/wps/wcm/connect/99854086-d728-42ba-a969-53d2fb889b89/EMCompass+Note+25+Green+Bonds+FINAL+12-5.pdf?MOD=AJPERES>.

²⁷ The World Bank 2015 <http://documents.worldbank.org/curated/en/400251468187810398/What-are-green-bonds>.

²⁸ ICMA 2016 <https://www.icmagroup.org/assets/.../Green-Bonds/GBP-2016-Final-16-June-2016.pdf>: Green Projects are defined as projects and activities as defined by the issuer and in line with the issuer's project process for evaluation and selection. The management of the Green Bond proceeds should be traceable within the issuing organisation and issuers should report at least annually on use of proceeds. Green projects are defined as projects and activities as defined by the issuer and in line with the issuer's project process for evaluation and selection. The management of the green bond proceeds should be traceable within the issuing organisation and issuers should report at least annually on use of proceeds.

The Green Bond Principles (GBP) were set up principally to avoid greenwashing as well as providing a framework for green bonds.²⁹ Whilst being voluntary the GBP can, therefore, be reserved as "process guidelines" on voluntary reporting, disclosure and monitoring.³⁰ The GBP regulate a wide variety of green bonds such as the (a) green use of proceeds bonds; (b) green use of revenue proceeds bonds; (c) green use of proceeds project bonds, and the (d) green use of proceeds securitised bonds.³¹

The International Organisation for Standardization (ISO) is developing innovative environmental management standards, which will focus in particular "on melding economics and environmental management".³² The intention of the ISO 14030 standard will be to harmonise, unify and create an international standard, dispelling any confusion about what constitutes a green bond.³³ A taxonomy of assets and projects that can be financed by green bonds will be listed, and it will also provide assurance that the issued green bonds conform with environmental benefits assuring investors.³⁴

This study will focus on green bonds relating to energy and climate change in the African and South African contexts.

1.3 South African legal framework

The South African legal frameworks pertaining to green bonds include environmental, energy and financial legislation.

1.3.1 Environmental framework

Section 24 of the *Constitution of the Republic of South Africa*, 1996 (hereafter Constitution) states that everyone has the right to an environment that is not harmful

²⁹ CBI 2016 https://www.climatebonds.net/files/files/COP22_Directions_WEB.pdf; Greenwashing is an important concept to be avoided by green bonds because it primarily involves making misleading claims about environmental benefits.

³⁰ CBI 2016 https://www.climatebonds.net/files/files/COP22_Directions_WEB.pdf.

³¹ ICMA 2018 <https://www.icmagroup.org/green-social-and-sustainability-bonds/green-bond-principles-gbp/>.

³² Gould 2018 <https://www.iso.org/news/ref2287.html>.

³³ Gould 2018 <https://www.iso.org/news/ref2287.html>.

³⁴ Gould 2018 <https://www.iso.org/news/ref2287.html>.

to their health or well-being. The State must also through reasonable legislative and other measures "secure ecologically sustainable development and use natural resources while promoting justifiable economic and social development".³⁵

Section 2(4) of *National Environmental Management Act* 107 of 1998 (NEMA) states as a general principle that any organ of state at every level must exercise its decision-making with the protection of the environment and sustainability as their most important objectives in mind.³⁶ The *National Environmental Management: Air Quality Act* 29 of 2004 (NEM:AQA) not only aims to prevent air pollution and degradation of the ecosystems,³⁷ but also addresses climate change issues and related topics such as the reporting of CO₂ and GHG emissions.³⁸

The *Climate Change Bill*, 2018 was introduced.³⁹ The Bill is a reflection of South Africa's commitment towards the *Paris Agreement* and the actioning of South Africa's National Climate Change Response Policy.⁴⁰ The purpose of the Bill is to communicate and implement an effective nationally determined climate change response that includes adaptation and mitigation strategies.⁴¹ There is acknowledgement in the Bill that anthropogenic climate change represents an urgent threat to humanity which requires a co-ordinated response.⁴² The *National Climate Change Response White Paper* and the Bill state that South Africa is faced with severe impacts of climate change to the extent that if global temperatures were to increase by 2° Celsius, the increase would translate to 4° Celsius for South Africa.⁴³ The Bill makes no mention of climate finance or the use of green bonds for adaptation and mitigation purposes, creating doubt as to how effective the Bill will be in mitigating GHG. In its current

³⁵ Section 24(b)(iii) Constitution.

³⁶ Section 2(4) NEMA.

³⁷ Section 2(a)(i)-(ii) NEM:AQA.

³⁸ Section 21 (1)(a) NEM:AQA.

³⁹ South Africa also adopted a *Carbon Tax Act* 15 of 2019, see Winkler 2017 *JESA* 12-26.

⁴⁰ Diemont, Rapson and Kilner 2018 <http://www.webberwentzel.com/wwb/content/en/ww/ww-in-the-news?oid=64344&sn=Detail-2011&pid=32749>.

⁴¹ DEA 2018

https://www.environment.gov.za/sites/default/files/docs/memorandum_objectsofthecclimatechangebill2018.pdf.

⁴² CoGTA 2018 <http://www.cogta.gov.za/?p=4218>.

⁴³ Loser 2018 https://cer.org.za/wp-content/uploads/2018/08/Life-After-Coal-Comments-on-CC-Bill_8-August-18.docx.pdf; DEA 2018 <http://www.erc.uct.ac.za/node/1230284>.

form the Bill does not aggressively tackle the issue of meeting the 2° Celsius above pre-industrial levels whilst pursuing the 1.5° Celsius limit agreed to at the *Paris Agreement*.⁴⁴

1.4 Energy framework

1.4.1 National Development Plan 2030 (NDP)

The National Development Plan (NDP) is a broad "strategic framework" that aims to eliminate poverty and reduce inequality by 2030 whilst advancing the lives of the citizens.⁴⁵ "Building environmental sustainability and resilience" are key tenants of the NDP and should be part of the broader strategy for climate change mitigation.⁴⁶ Electricity is critical in the NDP and therefore the procurement of 20 000 MW of renewable energy is part of its articulation of an "expanded renewable energy programme" that could lead to a significant investment into renewable energy technologies and skills development in South Africa.⁴⁷ The NDP states that improvement in mineral extraction and processing must take place with the potential of a 15 percent reduction in GHG emissions.⁴⁸ The intended objectives of the NDP set for a transition to a low carbon economy but the NDP, however, does not address or refer to financial instruments or incentives to achieve these goals.

1.4.2 Integrated Electricity Resource Plan for South Africa 2010-2030

The Integrated Resource Plan of South Africa, 2018 (IRP 2018) describes an energy mix of nuclear, solar photovoltaic, pump storage, wind, concentrated solar power

⁴⁴ Loser 2018 https://cer.org.za/wp-content/uploads/2018/08/Life-After-Coal-Comments-on-CC-Bill_8-August-18.docx.pdf; DEA 2018 <http://www.erc.uct.ac.za/node/1230284>.

⁴⁵ NPC date unknown http://www.dac.gov.za/sites/default/files/NDP%202030%20-%20Our%20future%20-%20make%20it%20work_0.pdf 35.

⁴⁶ NPC date unknown <https://www.gov.za/documents/national-development-plan-2030-our-future-make-it-work> 35.

⁴⁷ NDP date unknown <https://www.gov.za/documents/national-development-plan-2030-our-future-make-it-work> 48.

⁴⁸ Barnard 2018 *Energy for Sustainable Development*.

(CSP), hydropower, with coal still forming the baseload.⁴⁹ This plan is important because it serves as "an indication of the country's electricity demand, how this demand will be supplied and what it will cost".⁵⁰ This plan is described as a "living plan" drafted by the Department of Energy, embodying a 20 year electricity plan that acknowledges the direct link between energy and the rising levels of GHG in South Africa, and the required sector mitigation requirements.⁵¹ It must be said that in the long term once the State is locked into huge fleet contracts for the relevant coal or nuclear power stations it will be difficult if not impossible, to get out of them.⁵² Most significantly this plan increases generation within the various technological limits set by the IRP 2010.⁵³ Two revisions have been made since 2010 with the most recent being done in 2018.⁵⁴

The IRP shows an increase in renewable energy which should see a decline of GHG by 30 percent by 2030.⁵⁵ Coal supply should drop from just over 80 percent to 46 percent by the same period and renewable energy will account for 9 percent of all electricity supply, an insignificant figure, but perhaps it leaves some optimism relative to the current position.⁵⁶

The adjustments made between the 2010 IRP and the IRP 2018 centre around the percentage of renewable energy and the specific types of renewable energy to be implemented.⁵⁷ Renewable energy should total 26 percent, with 10 percent from contracted photovoltaics, 1 percent from concentrated solar power, 10 percent from

⁴⁹ IRP 46 percent coal (34 000 MW), 2.5 percent nuclear (1 860 MW), 4 percent pump storage generation (2 912 MW), 10 percent Wind (11 442 MW), 10 percent Solar PV (7 958 MW), 1 percent Concentrated Solar Power (600 MW) and 2 percent hydropower (4 696 MW).

⁵⁰ Govender 2018 <https://www.cliffedekkerhofmeyr.com/en/news/publications/2018/projects/energy-alert-28-august-the-draft-integrated-resource-plan-2018-the-roadmap-for-future-generation-capacity-.html>.

⁵¹ Barnard 2018 *Energy for Sustainable Development*.

⁵² Baker, Newell and Phillips 2014 *New Political Economy* 791-818.

⁵³ Baker, Newell and Phillips 2014 *New Political Economy* 791-818 allowing for an increase in renewable energy to 23,559 MW.

⁵⁴ Barnard 2018 *Energy for Sustainable Development*. The Revised Balanced Scenario (RBS) put forward by the Draft IRP of 2016 describes an energy scenario that best fit(s) the realities of known physical constraint, prescribe specific objectives or desired future conditions.

⁵⁵ Du Toit *Promoting renewable energy* 283.

⁵⁶ Du Toit *Promoting renewable energy* 283.

⁵⁷ Barnard 2018 *Energy for Sustainable Development*.

wind and 5 percent from (imported) hydro power.⁵⁸ Criticism of the plan reveals the political economy of electricity in South Africa because the "technical advisory group" which formed the modelling process of the plan was largely experts from the fossil fuel industry.⁵⁹ The exclusion of input from renewable energy, civil society, and other social experts was likely to reflect the industrial bias of this "technical advisory group".⁶⁰

1.4.3 Financial Regulations

South Africa's financial sector is said to have a "sound and legal regulatory framework that aims to ensure systemic stability in the economy". The *Financial Sector Regulation Act* 9 of 2017 (FSR Act) General Notice 169 in *Government Gazette* 41549 dated 29 March 2018 supports a "balanced and sustainable economic growth in South Africa".⁶¹ The growth and issuance of green bonds by cities such as Johannesburg and Cape Town has seen the Johannesburg Stock Exchange (JSE) listing a "JSE Green Bond Segment" in September 2017.⁶² The green bonds listed on the JSE will be and are aligned to the core principles of the GBP as defined by the International Capital Market Association.⁶³ Section 6.10 of the JSE Green Bond Segment of the Debt Listings Requirements makes provision for the listing of a "green instrument" such as a green bond which is aligned to international best practice.⁶⁴ The GBP are binding on all companies that list a green bond on the JSE unlike in other jurisdictions where the GBP serve as guidelines.⁶⁵ The Listing Requirements of the JSE are an important regulatory instrument in the enforcement of environmental social governance (ESG) principles and other compliance regulations.⁶⁶ Through the Listing Requirements

⁵⁸ Barnard 2018 *Energy for Sustainable Development*.

⁵⁹ Baker, Newell and Phillips 2014 *New Political Economy* 802.

⁶⁰ Baker, Newell and Phillips 2014 *New Political Economy* 802.

⁶¹ GLI 2018 <https://www.globallegalinsights.com/practice-areas/banking-and-finance-laws-and-regulations/south-africa>.

⁶² EM 2018 <https://www.b2bcentral.co.za/jse-launches-green-bond-segment-to-fund-low-carbon-projects/>.

⁶³ Section 6(10) JSE Debt Listing Requirements in GN 142 in GG 41037 of 11 August 2017 (hereafter JSE Debt Listing Requirements).

⁶⁴ Section 6(10) JSE Debt Listing Requirements.

⁶⁵ Bowmans 2018 https://www.bowmanslaw.com/press_releases/climate-change-propels-growth-in-green-bonds/.

⁶⁶ JSE Debt Listing Requirements s 6(10).

companies or regulators may be held to account by shareholders for any transgressions in the event of non-disclosure.⁶⁷

1.4.4 Pension Funds Act 24 of 1956 and Pension Funds Amendment Act 22 of 1996

Climate change is now a critical factor in how pension funds invest their considerable funds which are vulnerable to at least three major categories of climate-related risk: climate impact risks, carbon constrained demand risks, and climate liability risks.⁶⁸ Pension funds in terms of section 7(c) of the *Pension Funds Amendment Act 22 of 1996* have a fiduciary duty of care, diligence and good faith to their beneficiaries. This places an onus on pension funds to make judicious investments that do not harm the environment intentionally. Recent amendments to regulation 28 of GN 142 of 2017⁶⁹ issued in terms of the *Pension Funds Act 24 of 1956* resulted in the endorsement of the principle that investors must look beyond the profit motive for investing sustainably and due consideration must be made of ESG considerations for "responsible and prudent investment decision-making".⁷⁰ Since 2012 there has been an expansion of the ESG principles within the Act to include Responsible Investing (RI) which mean that Pension Funds must now provide reasons why retirement funds have integrated ESG factors into their portfolios, policies and disclosures and if not why that is the case.⁷¹ The Sustainable Returns for Pensions and Society was created as an "industry-led initiative" by southern African member states and serves as a framework for "institutional investors to incorporate ESG in their policies and investment decisions."⁷²

Pension funds may, therefore, have a role to play in driving low carbon investments thus de-risking some of their infrastructure investments. Although there are general weaknesses in reporting requirements within the *Pension Funds Act*, the

⁶⁷ JSE Debt Listing Requirements s 6(10).

⁶⁸ CIEL 2016 <https://www.ciel.org/project-update/pension-funds-the-imperative-of-climate-change-assessment/>.

⁶⁹ GN 142 in GG 41037 of 11 August 2017.

⁷⁰ Mughogho and Dhirani 2012 http://awsassets.wwf.org.za/downloads/responsible_investing_for_climate_change_and_water_wwf_nov_2012.pdf.

⁷¹ RIO Guide 2015 <http://sustainablereturns.org.za/resources/>.

⁷² RIO Guide 2015 <http://sustainablereturns.org.za/resources/>.

implementation of ESG principles can provide for better responsible investing and adherence to fiduciary duties by investors.⁷³ In bridging the electricity financing gap, the promotion of transparency and good governance at the policy and energy consumption levels has been critical to drawing investment into the energy sector.

The Code for Responsible Investment in South Africa (CRISA) came into effect in February 2012 and not only serves as a framework but also as a guide for institutional investors to incorporate ESG principles in their investment decisions thus leading to responsible investing⁷⁴ Listed and non-listed investors with emphasis on "institutional investors are expected to adopt the principles and practice recommendations in CRISA on an 'apply or explain' basis".⁷⁵ This has expanded the fiduciary duties of the institutional investor considerably thus providing a criterion for responsible investing in South Africa.⁷⁶ CRISA has affirmed and given effect to the United Nations Principles for Responsible Investment initiative (PRI)⁷⁷ providing a link with international guidelines of which more than US\$ 22 trillion dollars is under investment.⁷⁸ CRISA actively encourages both institutional and individual investors to incorporate ESG principles into their decision-making.⁷⁹ CRISA can reinforce the use of green bonds entrenching responsible investing as well as investing in low carbon infrastructure and effectively contributing towards adaptation and mitigation requirements.

1.4.5 Carbon Tax Act 15 of 2019

The *National Climate Change Response White Paper*, 2011 first mooted the notion of a carbon tax "that would be both feasible and appropriate to achieve the desired behavioural changes and emissions-reduction targets".⁸⁰ The *White Paper* was followed by the *Carbon Tax Act* in 2019, drafted by Treasury, to act as an

⁷³ PRI 2015 <https://www.unpri.org/fiduciary-duty/fiduciary-duty-in-the-21st-century-south-africa/256.article>.

⁷⁴ IoDSA 2011 <https://www.iodsa.co.za/page/CRISACode>.

⁷⁵ IoDSA 2011 <https://www.iodsa.co.za/page/CRISACode>.

⁷⁶ IoDSA 2011 <https://www.iodsa.co.za/page/CRISACode>.

⁷⁷ IoDSA 2011 <https://www.iodsa.co.za/page/CRISACode>.

⁷⁸ IoDSA 2011 <https://www.iodsa.co.za/page/CRISACode>.

⁷⁹ IoDSA 2011 <https://www.iodsa.co.za/page/CRISACode>.

⁸⁰ Mandy, Mammatt and Van der Watt 2018 <https://www.pwc.co.za/en/assets/pdf/carbon-tax-bill-alert.pdf>.

environmental reform measure and achieve financial reform in the energy sector by taxing fossil fuel electricity generation.⁸¹ The purpose of the Act is "to provide for the imposition of a tax on the carbon dioxide (CO₂) equivalent of GHG emissions; and to provide for matters connected therewith".⁸² The energy sector is identified as having the highest mitigation potential in the medium term with mitigation opportunities listed as energy efficiency, demand side management and a less intensive emissions energy mix.⁸³ The *Carbon Tax Act* 15 of 2019 commenced 1 June 2019.⁸⁴

According to section 3(b) of the *Carbon Tax Act* 2019, a person is liable to pay an amount of tax calculated as contemplated in section 6 in respect of tax period as specified in section 16, if that person conducts an activity in the Republic resulting in greenhouse gas emissions above the threshold determined by matching the listed activity in the column "Activity/Sector" in Schedule 2 with the number in the corresponding line of the column "Threshold" of that table.⁸⁵ This liability is determined by reading together sections 29(1) and 57(1) of the NEM:AQA.⁸⁶ Various gases are listed as priority pollutants.⁸⁷ The mere fact that a specific category is listed in the provisions of the Act means that they will be liable for taxation.⁸⁸ There is no minimum threshold for the listed gases, therefore emission of these priority gases entails the imposition of a carbon tax.⁸⁹ The Preamble to the Act provides for a monetary value to be placed on carbon to effectively internalise the externalities of carbon emissions.⁹⁰ This liability will automatically apply to any thermal power plant with a capacity exceeding 10MW.⁹¹ Reporting of stationary emissions will be

⁸¹ *Carbon Tax Act* 15 of 2019.

⁸² *Carbon Tax Act* 15 of 2019.

⁸³ Barnard 2018 *Energy for Sustainable Development*.

⁸⁴ Regulations were issued in terms of s 19 of the Act – GN 1556 in GG 42873 of 29 November 2019.

⁸⁵ Section 3(b) *Carbon Tax Act* 15 of 2019.

⁸⁶ Barnard 2018 *Energy for Sustainable Development*.

⁸⁷ See, for example, *Declaration of Greenhouse Gases as Priority Air Pollutants* in terms of NEM:AQA – GN 710 in GG 40996 of 21 July 2020.

⁸⁸ Barnard 2018 *Energy for Sustainable Development*.

⁸⁹ *Carbon Tax Act* 15 of 2019, s 3(b).

⁹⁰ *Carbon Tax Act* 15 of 2019, Preamble.

⁹¹ Mandy, Mammatt and Van der Watt 2018 <https://www.pwc.co.za/en/assets/pdf/carbon-tax-bill-alert.pdf>.

determined by source category as per the requirements of the NEM:AQA.⁹² The Act sets a reduction in emissions being reduced from 34 percent by 2020 and 42 percent by 2025 against a business as usual curve.⁹³

At a rate of R120 per tonne of CO₂/carbon dioxide it is unlikely that it will have any consequential effect on carbon emissions.⁹⁴ The *Carbon Tax Act* does not refer to financial instruments or incentivise the introduction of green bonds to lower CO₂ emissions. The fragmentation of the current environmental and financial governance legislation creates an opportunity to streamline a coherent financial response strategy "to generate finance at the required scale, and to ensure corollary benefits of enhancing economic and social development in a sustainable way".⁹⁵

As South Africa lacks an environmental and financial legal framework to introduce green bonds in accordance with the GBP, it may take learning points from other foreign jurisdictions in this regard. There are legal gaps in the framework which provide for green bonds.

1.5 Other countries

Some countries have provided solutions to the introduction of green bonds as environmentally responsible instruments. Luxembourg and the United Kingdom Stock Exchanges have issued green bond listing requirements⁹⁶ that require second opinion verification.⁹⁷ In the United Kingdom (UK) use of proceeds are mainly allocated to low carbon infrastructure.⁹⁸ Luxembourg was the first Stock Exchange to list a green bond, namely the European Investment Bank (EIB) Climate Awareness Bond. There are currently over 140 listed green bonds on its bourse.⁹⁹ The developments in these

⁹² Barnard 2018 *Energy for Sustainable Development*.

⁹³ Du Toit *Promoting renewable energy* 35.

⁹⁴ Barnard 2018 *Energy for Sustainable Development*.

⁹⁵ Bowman and Steenmans 2018 <https://pureportal.coventry.ac.uk/en/publications/climate-finance-law-legal-readiness-for-climate-finance-report-an>.

⁹⁶ Luxembourg Stock Exchange 2018 <https://www.bourse.lu/green-bonds>.

⁹⁷ Luxembourg Stock Exchange 2018 <https://www.bourse.lu/green-bonds>.

⁹⁸ CBI 2018 https://www.climatebonds.net/files/reports/the_green_bond_market_in_europe.pdf.

⁹⁹ SSE (Initiative) 2017 <http://www.sseinitiative.org/wp-content/uploads/2017/11/SSE-Green-Finance-Guidance-.pdf>.

two countries inspired the International Standardization Organisation (ISO) to seek comments on a proposed ISO Standard for Green Finance.¹⁰⁰ The listing requirements of these two countries, as well as the ISO Standard may provide lessons for South Africa's financial laws.

The European Commission (EC), through its High-Level Expert Group on Sustainable Finance, made recommendations on issues dealing with sustainable finance.¹⁰¹ Amongst the recommendations, sustainability should be incorporated into prudential requirements and sustainable corporate governance and attenuating short-termism in capital markets should be favoured.¹⁰² These recommendations have resulted in the tabling of legislative proposals,¹⁰³ consultation and the appointment of a technical expert group on sustainable finance.¹⁰⁴ South Africa can also implement learning points from these legal measures.

The Nigerian Federal Government has aggressively pursued the raising of green bonds which saw it become the first African country to raise a sovereign green bond on the continent.¹⁰⁵ The Federal Ministry of Environment has issued Green Bond Guidelines (GBG) and the Central Bank has introduced Sustainable Banking Principles in guiding the Nigerian Market on the issuance of green bonds.¹⁰⁶ The issuance of green bonds is seen by the Federal Government of Nigeria as a means of financing and implementing Nigeria's commitments to the *Paris Agreement* in which Nigeria is set to reduce carbon emissions by 20 percent unconditionally and 45 percent by 2030

¹⁰⁰ Gould 2018 <https://www.iso.org/news/ref2287.html>; ISO/CD 14030-1 <https://www.iso.org/standard/43254.html>.

¹⁰¹ Norton Rose 2018 <http://www.nortonrosefulbright.com/knowledge/publications/171338/green-bonds>.

¹⁰² Norton Rose 2018 <http://www.nortonrosefulbright.com/knowledge/publications/171338/green-bonds>.

¹⁰³ EC 2018 https://ec.europa.eu/info/publications/180524-proposal-sustainable-finance_en.

¹⁰⁴ Norton Rose 2018 <http://www.nortonrosefulbright.com/knowledge/publications/171338/green-bonds>.

¹⁰⁵ Patzdorf 2018 <https://www.climatebonds.net/2018/09/new-report-creating-green-bond-markets-emerging-economies-joint-ifc-cbi-project-sustainable>.

¹⁰⁶ Patzdorf 2018 <https://www.climatebonds.net/2018/09/new-report-creating-green-bond-markets-emerging-economies-joint-ifc-cbi-project-sustainable>.

with international support.¹⁰⁷ The experience of Nigeria as well as the Guidelines may provide lessons for the South African energy sector.

In Kenya several financial institutions launched Green Bonds Programmes endorsed by the Central Bank of Kenya.¹⁰⁸ These programmes are coordinated under the Sustainable Finance Initiative¹⁰⁹ which is, on its turn, sanctioned by the National Treasury, Central Bank of Kenya as well as the Capital Markets Authority.¹¹⁰ Kenya is in the process of developing a Sovereign Green Bond which is seen as supporting the National Strategy under Vision 2030.¹¹¹ The National Climate Change Action Plan 2013-2017 paved the way for significant attention to be given to climate finance.¹¹² In 2016 the *Climate Change Act*¹¹³ was passed establishing a national Kenya Climate Fund which is described as "a financing mechanism for priority climate change actions and interventions".¹¹⁴ The South African energy sector can take learning points from both Kenya's financial measures and its new *Climate Change Act*.¹¹⁵

1.6 Problem statement

South Africa through the Johannesburg Stock Exchange (JSE) has the largest and most sophisticated bond market on the continent and green bonds as a financial mechanism can be implemented to catalyse low carbon and resilient infrastructure.¹¹⁶ It seems that green bonds as a financial mechanism through the debt markets could finance green projects by providing for the mitigation of GHG emissions. It is an opportunity for South Africa to transition from a coal-based energy system to one

¹⁰⁷ Debt Management Office Nigeria 2017 <https://www.dmo.gov.ng/fgn-bonds/green-bond/2290-green-bond-factsheet/file>.

¹⁰⁸ Patzdorf 2018 <https://www.climatebonds.net/2018/09/new-report-creating-green-bond-markets-emerging-economies-joint-ifc-cbi-project-sustainable>.

¹⁰⁹ Kenya Bankers Association 2016 <http://www.kba.co.ke/news7.php>.

¹¹⁰ Kenya Bankers Association 2016 <http://www.kba.co.ke/news7.php>.

¹¹¹ Kenya Bankers Association 2016 <http://www.kba.co.ke/news7.php>.

¹¹² Republic of Kenya 2016 http://www.environment.go.ke/wp-content/uploads/2018/08/The_Kenya_Climate_Change_Act_2016.pdf.

¹¹³ Bowman and Steenmans 2018 <https://pureportal.coventry.ac.uk/en/publications/climate-finance-law-legal-readiness-for-climate-finance-report-an>.

¹¹⁴ Bowman and Steenmans 2018 <https://pureportal.coventry.ac.uk/en/publications/climate-finance-law-legal-readiness-for-climate-finance-report-an>.

¹¹⁵ 11 of 2016.

¹¹⁶ JSE 2019 <https://www.jse.co.za/about/history-company-overview>. On the JSE Regulations see 4.2.4.

which is carbon neutral. Green bonds are, however, faced with standardisation and regulatory challenges.¹¹⁷ South Africa has a large bond market and is well equipped to position itself as a leader in green bond development.

The research question of this thesis is therefore, how should the regulation and governance of green bonds be undertaken in South Africa in order for these instruments to facilitate environmentally responsible investment in the country's energy sector, taking learning points from foreign jurisdictions?

1.7 Aim of the study

The aim of the study is to determine how green bonds should be regulated and governed in South Africa in order for these instruments to facilitate environmentally responsible investment in the country's energy sector, taking learning points from foreign jurisdictions.

To support the main aim, the following sub-aims are formulated, namely to

- Develop a theoretical framework for the regulation and governance of green bonds as an instrument to facilitate responsible investment in South Africa's energy sector.
- Discuss the international legal and policy frameworks pertaining to green bonds.
- Analyse the current South African legal framework to determine whether it provides for the regulation and governance of green bonds.
- Compare the regulation and governance of green bonds in foreign jurisdictions in order to propose learning points for South Africa.
- Recommend a legal framework for the regulation and governance of green bonds as an instrument to facilitate responsible investment in South Africa's energy sector.

¹¹⁷ Faske 2018 *Tulane ELJ* 293.

1.7 Research methodology

The study is based on a literature review of primary sources, such as international law, policy, legislation and case law, supported by secondary literature such as journal articles, textbooks, government documents and other related secondary literature.¹¹⁸ Use is made of non-legal literature to establish a business case for South Africa and to determine the advantages and disadvantages of green bonds. International standards as well as a Draft ISO Standard, as voluntary measures, also provide guidelines and inform the theoretical chapters.

A critical assessment of low carbon fiscal instruments evaluates the progress thus far made internationally. The study uses the legal comparative method by investigating foreign legal systems in order to find solutions for South Africa. The African countries chosen are sub-Saharan and relatively similar in terms of socio-economic development. They depend on much the same economic sectors, such as mining, industry and agriculture. As coastal countries, all three African countries share similar climate change related threats. All four countries featured in this study share a common legal system, namely English law. South Africa, however, has a mixed legal system consisting of Roman-Dutch Law and English law. The African countries are developing countries while the United Kingdom is a developed country. All three African countries were colonised by England at some stage or another.

Nigeria, and Kenya will provide some perspectives from an African and developmental scenario in terms of how they have managed to raise green bonds. Nigeria is the first African country that has been able to raise a sovereign green bond as stated before and Kenya has introduced legislation to regulate green bonds. The United Kingdom is regarded as one of the global leaders on green bonds. Some of the South African banking law and financial regulations are based on the English common law system (similar to Nigeria and Kenya) and the UK may therefore provide good learning points

¹¹⁸ Venter *Legal Research*; Watkins and Burton *Research methods in law*; Chynoweth "Legal Research"; Booth *et al The craft of research*. This study is not focuses on banking or investment law as such, but is an interdisciplinary study that takes into account various branches of law, including climate change law, energy law, environmental law and aspects of banking/ investment law.

for South Africa.¹¹⁹ The European Commission also provides guidelines. At the time of writing of the thesis, the UK was still part of the European Union and therefore reference will also be made to the European Union. The United Kingdom and the European Union cater for the developed world.

The study therefore includes a comparative study, as it will take guidance from these foreign jurisdictions and the European Union on a legal framework for South Africa on the regulation of green bonds.¹²⁰ It is acknowledged that it is not always possible to transplant foreign law into the South African legal system, and that any recommendations based on foreign law will have to be adapted to the South African situation.¹²¹

In addressing the research question the thesis is divided into six chapters, all of which are inter-related to the central research question. Chapter two provides the conceptual and theoretical background on the intricate relationship between climate change and mobilised finance, in particular green bonds as an environmentally responsible, effective investment and response mechanism to the impacts of climate change at the global level.

Chapter three provides an exposition of the international and regional law governance frameworks related to climate change, climate finance, ESG¹²², green bonds and other financial instruments such as sustainability linked bonds in order to distil guidelines for the governance of green bonds within the South African legal context.

¹¹⁹ See also Humby *et al* (eds) *Law and Legal Skills* chs 3 and 4. On the sources of banking law see Schulze 2002 14 *SA Merc LJ* 438ff; Schulze 2002 14 *SA Merc LJ* 601ff.

¹²⁰ The researcher would have visited Nigeria and Kenya to obtain more materials and to gain access to the original sources. The material on the United Kingdom is more readily available on the internet. However, due to the Covid-19 pandemic and the lockdown restrictions these countries could not have been visited. With the assistance of the Konrad Adenauer Stiftung the candidate would have been able to visit one of the German research institutions to obtain more materials on the European Union and United Kingdom's position – but similarly travel restrictions did not make this possible.

¹²¹ See in this regard Van Hoecke 2015 *Law and Method* 30.

¹²² While climate change law and environmental law are inherently linked they are distinct fields of study – see in this regard Ruhl and Salzman 2013 63 *Duke Law Journal* 975ff.

Chapter four addresses the South African legal framework in the context of how current regulations act as drivers for environmentally responsible investment in the energy sector and how such regulations provide for green bonds as a financial mechanism. This will lead to a discussion of South African legislation in how it provides for green bonds, the impact of climate change, and the financing of renewable energy as a mitigating low carbon energy source. Green bonds have the potential of leveraging the market as an alternative financial mechanism driven by investors who are pushing for sustainable energy use.

Chapter five is an analysis and discussion of foreign jurisdictions. These foreign jurisdictions are discussed in the context of addressing the gaps or deficiencies identified in South African law as providing remedial action. The UK has taken a lead in the implementation of green bond and shares many legal similarities with South Africa.¹²³ Climate change mitigation and energy sector reform will be elaborated on with the main focus on the implementation and regulation of green bonds as driver for climate change mitigation via funding of energy sector reform.

The final chapter (Chapter 6) will propose a legal framework for the issuance of green bonds to facilitate environmentally responsible investing in South Africa.

¹²³ South Africa, Nigeria and Kenya all inherited the English legal system (although in South Africa to a limited extent). Both Nigeria and Kenya have taken over the English legal system, while the South African law is based on both the civil and common law traditions, amongst others.

Chapter 2

Theoretical background

2.1 Background

The main aim of this chapter is to provide a conceptual and theoretical background on the intricate relationship between climate change and climate finance, in particular green bonds as an environmentally responsible, effective investment and response mechanism to the impacts of climate change at the global level. This theoretical framework will be used to benchmark the African regional and South African law relating to green bonds and to find learning points for South Africa from other countries (Chapter 5). Green bonds as a financial instrument, seem to be an efficient tool that can be utilised to meet the goals of the *Paris Agreement*. This will be discussed in Chapter 3.

In this chapter the theoretical perspectives on green bonds are discussed in the context of how climate finance flows may contribute towards reduction of future climatic impacts, whilst providing mitigation and adaptation strategies for climate change. A "green bond" is defined for the purposes of this study in the context of South Africa as well as within the greater African continent.¹²⁴ The bond market is considered as an instrument with the capability of growing infrastructure development in South Africa and its ability to broaden the investor base through institutional investors.¹²⁵ The various types of green bonds and their drivers are examined as enabling instruments within the context of regulating strategic funding for low carbon and resilient infrastructure, such as renewable energy. Energy production as the largest emitter of GHG requires a shift from carbon-based energy intensive sources to low carbon renewable technologies. Climate finance has grown substantially over the years as a response to the challenges of climate change, and therefore the growth of these funds will be examined.

¹²⁴ See para 2.4.

¹²⁵ See para 2.5.

Sustainable development and sustainable energy are critical to development. A contextual approach will be followed to examine the growth of the concepts and how they have impacted the energy sector.¹²⁶ Investment metrics and performance indicators such as ESG have become a critical part of the investment decision making affecting the raising of capital on the open markets.¹²⁷ Consumers are now a key part of the growth of companies and this input is investigated with a view to understand why companies are no longer just making decisions that affect the "bottom line".¹²⁸ There is also a need to understand bonds in the context of other investment mechanisms and these instruments will be discussed in chapter 2.6.

2.2 Green bonds: An overview

Political ineptitude and less than transparent solutions resulted in a voluntary response by private investors initiating a bottom-up green finance mechanism to deal with climate change impacts.¹²⁹ The EIB, supported by reports of the IPCC which suggested that substantial reductions in emissions would require large changes in investment patterns, initiated the first green bond in 2007. This 600 million Euro bond had the intention of financing environmentally sustainable infrastructure primarily in the form of renewable energy.¹³⁰ This bond was aptly named the "Climate Awareness Bond" which had proceeds "dedicated to renewable energy and energy efficiency projects".¹³¹ To stimulate the public and private sector, the World Bank followed in 2008 with an innovative "Strategic Framework for Development and Climate Change" bond similar to the one the year before which had been issued by the EIB. Despite these efforts, green bonds are a fractional portion of the green bond market and require scaling up if they are to meet the objectives of the *Paris Agreement*.¹³²

¹²⁶ See para 2.5.5.

¹²⁷ See para 2.5.6.

¹²⁸ See para 2.5.1.

¹²⁹ Ehlers and Packer 2017 *BISQR* 90.

¹³⁰ Trompeter 2017 *JSDLP* 5.

¹³¹ Jun *et al* 2016 http://unepinquiry.org/wp-content/uploads/2016/09/6_Green_Bonds_Country_Experiences_Barriers_and_Options.pdf.

¹³² See para 2.5.4.

To date, there is not a universally agreed legal definition on green bonds in the green finance or investment community.¹³³ This is primarily as a result of differences in approaches of common criteria and methodology on the matter by market participants on what constitutes "environmentally beneficial" use of proceeds.¹³⁴ The expansion of green bonds into emerging markets is also limited to a degree by the sophisticated nature of the bond market, lack of regulation, investor scepticism and global standards.¹³⁵ Binding regulations are a cause for concern in an unpredictable fledgling market.¹³⁶ This is further complicated by the fact that there are primarily two distinct green bonds on the market, these are the labelled (focus of this research) and the unlabelled green bonds.¹³⁷ The green bonds have been designated as such by the issuer with the intention of leveraging and promoting environmentally green projects. The green bond label is sometimes regarded as an artificial label; the "green" component is a convenient labelling system for a wide range of bond types.¹³⁸ Legally and structurally many bonds have nothing to do with each other – they can be bought and sold by anyone who buys them.¹³⁹

It is important to reach some level of consensus in a financial environment where more than seventy percent of mainstream institutional investors regard sustainable investing as central to their investment decision making.¹⁴⁰ Institutional investors who comprise a significant majority of the investors in green bonds use a multitude of approaches such as micro and macro formulas for their decision making.¹⁴¹ This creates the conundrum in terms of agreement on an all-encompassing definition of

¹³³ Ehlers and Packer 2017 *BISQR* 89.

¹³⁴ Ehlers and Packer 2017 *BISQR* 89.

¹³⁵ Wang 2018 Brooklyn *J Corp Fin & Com L* 482.

¹³⁶ Wang 2018 Brooklyn *J Corp Fin & Com L* 482.

¹³⁷ Talbot 2017 *Villanova ELJ* 128.

¹³⁸ Donovan and Bardalai 2018 file:///C:/Users/p10180869/Downloads/ltg_other_2018_05__1031.pdf 9.

¹³⁹ Donovan and Bardalai 2018 file:///C:/Users/p10180869/Downloads/ltg_other_2018_05__1031.pdf 9.

¹⁴⁰ Park 2018 *Stanford JIL* 8.

¹⁴¹ Inderst *et al* 2012 <https://www.oecd-ilibrary.org/content/collection/20797117?sort=pubdateasc&page=2> 38.

what constitutes a "green investment" let alone a "green bond".¹⁴² "Greenness" as a metric still lacks clarity.

The other reason for a lack of consensus is the result of weak transparency and reporting requirements.¹⁴³ A major challenge to market growth and investor confidence is the issuance of green bond certification in response to rising investor concerns about "greenwashing" and they therefore run the risk of inaccurate profiling.¹⁴⁴ Green washing is defined as the "superficial or insincere display of concern for the environment".¹⁴⁵ Greenwashing creates principally two different risks: reputational risk and legal risk.¹⁴⁶ Both risks could potentially lead to fraud prosecutions thereby harming the wider market in a market largely dependent on trust. In some jurisdictions green bonds are tax exempt, to promote investment into sustainable infrastructure.¹⁴⁷ This creates the possibility of unscrupulous behaviour by some corporations in a self-labelled environment whereby the possibility of misappropriation of the use of proceeds exists.¹⁴⁸ In simple terms the issuer of a supposed green bond advertises green initiatives but actually invests the capital raised in brown investments that harm the environment.¹⁴⁹ This is misleading and fraudulent. Though Poland was very successful in raising a sovereign green bond, it has consistently vetoed climate policies as an attempt at protecting its coal industry.¹⁵⁰ Some investors could have been deterred by the historical stance that Poland has had on climate change policies.

Market participants in the United States and other parts of the world experienced green bond growth. In trying to advance sustainable financing these participants have advocated for more credibility, transparency and consistency in the green bond

¹⁴² Inderst *et al*/2012 <https://www.oecd-ilibrary.org/content/collection/20797117?sort=pubdateasc&page=26>.

¹⁴³ Trompeter 2017 *JSDLP* 9.

¹⁴⁴ Park 2018 *Stanford JIL* 6.

¹⁴⁵ Talbot 2017 *Villanova ELJ* 129.

¹⁴⁶ Talbot 2017 *Villanova ELJ* 129.

¹⁴⁷ Wang 2018 Brooklyn *J Corp Fin & Com L* 469.

¹⁴⁸ Wang 2018 Brooklyn *J Corp Fin & Com L* 469.

¹⁴⁹ Wang 2018 Brooklyn *J Corp Fin & Com L* 469.

¹⁵⁰ Wang 2018 Brooklyn *J Corp Fin & Com L* 485.

market so as to protect the integrity of the "green" label.¹⁵¹ The modest growth of green bonds from a niche to a mainstream debt instrument, reached a turning point in 2013 when the first US\$1 billion green bond was sold within an hour of issuance.¹⁵² This was quickly followed by the first corporate green bond in the United States.¹⁵³ The United States entered the scene when local municipal governments started to issue their own green bonds with Massachusetts issuing an oversubscribed green bond in 2013 of one hundred million dollars.¹⁵⁴ New York and the state of California, not to be outdone, issued their own green bonds in 2014 providing some credibility to the market.¹⁵⁵

National government involvement has been a major contributor to green bond issuance globally with developments of the sovereign green bond being part of this new growth.¹⁵⁶ The EIB and World Bank issued green bonds that went to countries such as Columbia, Peru and Mexico.¹⁵⁷ Several years after the first issuance of the first green bond, China in 2015, issued a green bond becoming the global leader with a thirty three percent stake in the global market.¹⁵⁸ This growth has been driven in large part by the uniform global effort to invest in climate finance instruments in recognition of the catastrophe which is climate change.¹⁵⁹ China has every reason to lead in this regard as a result of rapid industrialisation in the last few years, many would say economic development had disregard for pollution and other climate considerations. Real growth of the market has in large part been driven by private capital and this has been in the form of the institutional investor, resulting in exponential growth with the likes of HSBC and ING making their entry.¹⁶⁰

Green bonds are now a significant financial investment mechanism with total issuance reaching US\$257.7 billion in 2019 up by 51 per cent on 2018 figures of US\$170.6

¹⁵¹ Breen and Campbell 2017 *NRE* 18.

¹⁵² Trompeter 2017 *JSDLP* 5.

¹⁵³ Breen and Campbell 2017 *NRE* 5.

¹⁵⁴ Talbot 2017 *Villanova ELJ* 131.

¹⁵⁵ Talbot 2017 *Villanova ELJ* 131.

¹⁵⁶ Park 2018 *Stanford JIL* 16.

¹⁵⁷ Talbot 2017 *Villanova ELJ* 128.

¹⁵⁸ Talbot 2017 *Villanova ELJ* 131.

¹⁵⁹ Talbot 2017 *Villanova ELJ* 132.

¹⁶⁰ Talbot 2017 *Villanova ELJ* 132.

billion.¹⁶¹ The labelling of a bond as "green" is highly contested by some and there is yet to be any global consensus on what constitutes "green".¹⁶² This variance in definitions inhibits and affects the integrity of green bonds in some jurisdictions limiting their potential as an environmentally responsible mechanism in combatting the effects of climate change. However, there has been developments in certification by different participants in the growth of green bonds as they evolve which has provided for more granularity to the definitions.¹⁶³ It is therefore paramount to reach consensus on definitions of green bonds or, if left unaddressed, there may be consequences in the form of systemic legitimacy by legislators, regulators and investors most importantly, thus stalling green bond growth.¹⁶⁴

2.3 What is a bond?

The most popular traded asset class on the stock market is the bond. They are called primary securities and underlie stock markets and were in 2019 valued at over US\$102.8 trillion.¹⁶⁵ Globally bonds are regulated by the International Capital Market Association (ICMA) which was formed by the creation of two market groups in 2005.¹⁶⁶ It consists of non-governmental association dealers which make recommendations on trading practices and documentation.¹⁶⁷ In 2009 the Johannesburg Stock Exchange (JSE) acquired the Bond Exchange of South Africa, forming the largest bond stock exchange on the African continent.¹⁶⁸ This is the "largest Debt Market in Africa, both by capitalisation and by liquidity" and the nineteenth largest globally.¹⁶⁹ The JSE provides a definition of bonds to connote:

¹⁶¹ CBI 2020 <https://www.climatebonds.net/2020/02/green-bond-highlights-2019-behind-headline-numbers-climate-bonds-market-analysis-record-year>.

¹⁶² Ehlers and Packer 2017 *BISQR* 101.

¹⁶³ Ehlers and Packer 2017 *BISQR* 90.

¹⁶⁴ Park 2018 *Stanford JIL* 7.

¹⁶⁵ Sifma Capital Markets Fact Sheet 2019 <https://www.sifma.org/wp-content/uploads/2019/09/2019-Capital-Markets-Fact-Book-SIFMA.pdf>.

¹⁶⁶ Wood *Law and Practice* 193.

¹⁶⁷ Wood *Law and Practice* 193.

¹⁶⁸ JSE 2019 <https://www.jse.co.za/about/history-company-overview>. On the JSE Regulations see 4.2.4.

¹⁶⁹ JSE 2019 <https://www.jse.co.za/about/history-company-overview>.

Any security issued by the Government or any statutory body, municipality, local authority or other similar body or institution recognised by the committee as issuers of such securities.¹⁷⁰

Interestingly, *Wood* states that:

[T]he word bond has no technical meaning. It is as a generic term to include all obligations and instruments which constitute or evidence long-term indebtedness, and which are traded between investors during the period between their issue and the date of redemption. The bonds may be in the form of documents or may consist of book entries, the benefit of which is traded. The indebtedness may be that of a central government or government agency, of a municipal authority, or of a company. The latter category includes by companies ('special purpose vehicles') which have no underlying business and the purpose of which is to borrow money as an issuer of debt securities into the bond market. The proceeds of the borrowing are then lent on to the company's sponsoring entity or are used to buy assets from the entity.¹⁷¹

Wood also states that bonds are loans and that they have the following characteristics:

- (1) made typically by sophisticated investors, such as insurance companies, banks, large corporate pension and investment funds, and
- (2) evidenced by transferable debt securities issued by the borrower (issuer) to the initial lenders (subscribers). The main alternative is a syndicated loan from commercial banks.¹⁷²

Bonds date back to the thirteenth century *prestii* (loan) which was issued by the Venetian government and are viewed as a traditional financial instrument.¹⁷³ Institutional investors and governments throughout the world make use of bonds to borrow money from the market. Jones *et al* accordingly explain bonds as follows:

They function as a fixed term IOU between the borrower (the bond issuer) and the (bond investors). Investors loan money to issuers by purchasing their bonds. In return, investors receive regular interest payments until the bond 'matures' and the issuer repays the principal in full. The interest payments provide steady and relatively safe returns, so they typically provide more secure sources of income in an investment portfolio. On the issuer side, bonds typically provide cheaper capital

¹⁷⁰ Viljoen 1998 *SA Merc LJ* 7.

¹⁷¹ Bamford *Principles of International Financial Law* 140.

¹⁷² Wood *Law and Practice* 193.

¹⁷³ Jones *et al* 2020 *Geoforum* 50.

than bank loans. This makes them an attractive option for financing capital intensive projects like renewable energy or public transport infrastructure.¹⁷⁴

Duran *et al*/ discussed various historical definitions of bonds. From these definitions the following elements can be distilled, namely (a) bonds are loans, (b) they are securities, (c) negotiable instruments, (d) receives interest payments over an agreed stipulated period of time, and (e) is a financial instrument.¹⁷⁵ Based on the above, issued bonds can generally therefore be regarded as loans in the form of negotiable debt securities with interest payments that are subscribed to by investors and are payable to whomever physically has them.¹⁷⁶

The bond securities are listed on the stock exchange so as to attract a broader group of investors.¹⁷⁷ However, some bond securities such as Green Bonds are not always listed on the stock exchange but can be bought and traded through stockbrokers. Listing Green Bonds provides the necessary scale which is required for low-carbon investments which has traditionally not been available by providing a wider access to a range of investors, improving the liquidity of green bonds by enabling greater market connectivity and more centralised liquidity than over the counter (OTC) market.¹⁷⁸ This access to investors enlarges the number of investors thereby allowing for the raising of greater amounts of capital. The listing of bonds increases the marketability of a company.¹⁷⁹ Individuals are generally not the intended group of investors though some high-net worth individuals are and can be bond investors, as well as mutual banks, pension funds, and insurance funds.¹⁸⁰ Some of these institutions may be restricted by regulation to only invest in listed securities. This limits funding or capital raising by non-listed companies.

¹⁷⁴ Jones *et al*/ 2020 *Geoforum* 50.

¹⁷⁵ Duran *et al* 2015 *Procedia Economics and Finance* 49. This section discusses bonds in general. The South African position will be discussed in 4.3. See definition of bonds in South African context below.

¹⁷⁶ Wood *Law and Practice* 9.

¹⁷⁷ Wood *Law and Practice* 9.

¹⁷⁸ CBI 2017 <https://www.climatebonds.net/resources/reports/role-exchanges-accelerating-growth-green-bond-market> 3.

¹⁷⁹ Wood *Law and Practice* 9.

¹⁸⁰ Wood *Law and Practice* 9.

Trading of bonds generally takes place between the parties ("over-the-counter"-OTC), this means the bearer of a bond can trade with another interested party for an agreed amount of money.¹⁸¹ Stock exchanges quote the current price traded between the parties thus providing a more reflective price which is often the price at which it has exchanged hands. Some trades are not done on the exchange but rather between dealers on behalf of their clients.¹⁸²

Bonds, like any other listed security, must comply with the specific country's Stock Exchange Regulations.¹⁸³ These requirements include that the issuer must comply with disclosure requirements which means that the issuer must enter into a listing undertaking or its equivalent.¹⁸⁴ This entails a commitment to the provision of continuing information and to notify events which may lead to false market information in the securities an example of this is adverse changes which are not public knowledge and which may significantly affect the issuer's ability to meet its obligations.¹⁸⁵ Issuers of bonds may find themselves constrained by regulatory requirements which may change during the currency of the securities and impose more onerous disclosure obligations. This may mean the issuer cannot de-list or enlist elsewhere.¹⁸⁶ Inflexibility may mean that issuers may miss-out on a "window" period in the market and any other opportunities made cumbersome by the necessary documentation so required.¹⁸⁷

At the international level, bonds are affected by complex legal issues.¹⁸⁸ These legal issues mean that bonds are not legally the same in nature they have different contractual and property elements in the different legal regimes.¹⁸⁹

¹⁸¹ Wood *Law and Practice* 193.

¹⁸² Wood *Law and Practice* 128.

¹⁸³ Wood *Law and Practice* 128.

¹⁸⁴ Wood *Law and Practice* 128.

¹⁸⁵ Wood *Law and Practice* 129.

¹⁸⁶ Wood *Law and Practice* 129.

¹⁸⁷ Wood *Law and Practice* 129.

¹⁸⁸ Bamford *Principles of International Financial Law* 141.

¹⁸⁹ Bamford *Principles of International Financial Law* 141.

Many interrelated parties are involved in the drawing up of a bond.¹⁹⁰ These complex relationships include the issuer, investor, and the entities involved in the drawing up of documents which govern the issue and nature of the obligations of the issuer.¹⁹¹ Another intricate layer is created which involves relationships arising out of the trading of the bond and the separate obligations undertaken by the sellers, buyers, and the brokers who act as agents for them.¹⁹² A certain level of sophistication adds to the complexity when bonds are issued at an international level.¹⁹³ This can involve several jurisdictions with a variety of investors from a global perspective.¹⁹⁴ The legal concept of tradability creates binding rights between the parties in a bond and such rights can be transferred from one party to another.¹⁹⁵ The concept of negotiability provides:

... that once the coin has been accepted by someone bona fide and for value, the coin is thereafter 'in circulation', and any former rights of ownership (e.g. the ownership of someone from whom the coin was stolen sometime previously) are extinguished.¹⁹⁶

The tradability concept arose from the connection between money in the form of coins.¹⁹⁷ The ownership of coins passed by means of delivery, a rule was historically imposed in which before one could accept the coin they had to be sure that the delivery of such coin would mean that they would own it upon delivery.¹⁹⁸ If there was a risk that the coin was stolen then the payee could not accept it unconditionally.¹⁹⁹ Bills of exchange and promissory notes have been commercially successful because of the concept of negotiability.²⁰⁰ Once it had been established

¹⁹⁰ Bamford *Principles of International Financial Law* 141.

¹⁹¹ Bamford *Principles of International Financial Law* 141.

¹⁹² Bamford *Principles of International Financial Law* 141.

¹⁹³ Bamford *Principles of International Financial Law* 141.

¹⁹⁴ Bamford *Principles of International Financial Law* 141.

¹⁹⁵ Bamford *Principles of International Financial Law* 151.

¹⁹⁶ Bamford *Principles of International Financial Law* 151.

¹⁹⁷ Bamford *Principles of International Financial Law* 151.

¹⁹⁸ Bamford *Principles of International Financial Law* 151.

¹⁹⁹ Bamford *Principles of International Financial Law* 151. Bamford refers to the Australian case of *Ilich v The Queen* [1987] HCA1; 162 CLR 110; 69 ALR 232 in which "the court pointed out that money which is stolen passes title, provided that it passes bona fide and for valuable consideration: that is because of the doctrine of negotiability, and negotiability was first attributed to chattels in the form of money".

²⁰⁰ Bamford *Principles of International Financial Law* 151.

that the holder having taken the note in good faith and for value, he or she was entitled to enforce the promise in the instrument, even if the person who gave it to him or her did not have good title to it.²⁰¹ Bonds have been instrumental in the transference of value from one party to another across jurisdictions globally.²⁰²

In South Africa a bond is defined as a "security" under section 1 of the *Financial Markets Act* 19 of 2012 (hereinafter referred as the *Financial Markets Act*).²⁰³ Section 11 of the Act provides for the Listing of Securities.²⁰⁴ The *Financial Markets Act* lists Rand-denominated debt securities issued by government, corporates and municipalities.²⁰⁵ These debt securities are referred in practice to as "scrip" in colloquial language.²⁰⁶ Legally speaking the rights of action are of interest in the transference of rights.²⁰⁷ These rights are transferred by cession.²⁰⁸ The seller cedes the shares in the form of bonds or gilts to the buyer.²⁰⁹

Bonds can further be regarded as personal rights against the issuer of the bond.²¹⁰ The evidence of that right is physically represented by the scrip, certificate or paper.²¹¹ This is the prima facie evidence of that transaction.²¹² A distinction is drawn by Malan between a negotiable instrument and the gilt or bond, wherein he states that the gilt exists independently and separately from the scrip or the paper.²¹³ There is a close nexus between a negotiable instrument in existence and a personal right incorporated in the document and the document itself.²¹⁴ This is not the case with a gilt or bond where no such nexus exists, between the gilt as a personal right and the scrip evidencing it.²¹⁵ Malan states that bills of exchange include bills in the strict

²⁰¹ Bamford *Principles of International Financial Law* 151.

²⁰² Bamford *Principles of International Financial Law* 153.

²⁰³ Chapter 1(1)(a)(ii) *Financial Markets Act* 19 of 2012.

²⁰⁴ Chapter 3 s 11 of the *Financial Markets Act* 19 of 2012.

²⁰⁵ Viljoen 1998 *SA Merc LJ* 4.

²⁰⁶ Viljoen 1998 *SA Merc LJ* 4.

²⁰⁷ Viljoen 1998 *SA Merc LJ* 4.

²⁰⁸ Viljoen 1998 *SA Merc LJ* 8.

²⁰⁹ Viljoen 1998 *SA Merc LJ* 8.

²¹⁰ Viljoen 1998 *SA Merc LJ* 14.

²¹¹ Viljoen 1998 *SA Merc LJ* 14.

²¹² Viljoen 1998 *SA Merc LJ* 14.

²¹³ Viljoen 1998 *SA Merc LJ* 14.

²¹⁴ Viljoen 1998 *SA Merc LJ* 14.

²¹⁵ Viljoen 1998 *SA Merc LJ* 14.

sense of the word, as well as cheques and notes which are sometimes classified as commercial paper.²¹⁶

Bills of exchange therefore are unlike gilts, whereas a bill of exchange is a negotiable instrument.²¹⁷ The terms "seek ... to express the close nexus between possession of the instrument and the enforcement and exercise of the incorporated and embodied in it".²¹⁸ The expression in the maxim "das Recht aus dem Papier folgt dem Recht am Papier" provides for the nexus between personal rights embodied in an instrument and the possession of that instrument.²¹⁹ Viljoen explains this more simplistically by way of:

By identifying the right with the paper, the transfer and the exercise of the right is simplified, and the right is in a certain sense subjected to the principles of the law of property governing the instrument. This does not transform the incorporeal right into a movable corporeal, but merely emphasises the close connection between possession of the instrument and exercise of the rights embodied in it.²²⁰

One needs to be in possession of the instrument and the enforcement of such rights arising is as a result of such possession.²²¹ The transference of the rights can only be done by negotiation.²²² Personal rights in gilts or bonds can be enforced without the possession of the scrip or paper evidencing it, but said rights can be transferred by cession.²²³ The seller has a duty as the seller of the personal rights, as incorporeal rights not embodied in a negotiable instrument, of ceding to the purchaser the personal rights sold.²²⁴ This means that personal rights in gilts or bonds can only be transferred by cession only.

²¹⁶ Malan, Pretorius and DuToit *Malan on Bills of Exchange* 5th ed 5. Viljoen 1998 *SA Merc LJ* 14. Viljoen refers to the term a commercial paper "a rather inadequate rendering of the German *Wertpapier* and Afrikaans *waardepapier*. *Wertpapier* is an instrument incorporating a right in such a manner that the right can be exercised only through possession of it".

²¹⁷ Viljoen 1998 *SA Merc LJ* 14.

²¹⁸ Viljoen 1998 *SA Merc LJ* 14.

²¹⁹ Viljoen 1998 *SA Merc LJ* 14.

²²⁰ Viljoen 1998 *SA Merc LJ* 14.

²²¹ Viljoen 1998 *SA Merc LJ* 15.

²²² Viljoen 1998 *SA Merc LJ* 15.

²²³ Viljoen 1998 *SA Merc LJ* 15.

²²⁴ Viljoen 1998 *SA Merc LJ* 15.

It can therefore be said that cession is an agreement between the transferor and the transferee to transfer the incorporeal rights vesting in the transferor to the transferee for the purposes of transferring incorporeal rights.²²⁵ To effect such rights bilaterally, *animus transferendi*²²⁶ and *animus acquirendi*²²⁷ are required for the provision of effective transfer of the ceded rights.²²⁸ The intention of the parties involved in the transaction is important as "these intentions depend on and must be construed from and in accordance with the circumstances prevailing at the time".²²⁹ Malan suggests that communicating the intention of the parties to the JSE may not be necessary as "the seller has either waived it or the exigencies of the course of business by implication make it unnecessary".²³⁰ Therefore upon instruction by the cedent to the agent to sell the gilts or bonds on the JSE, there is a transfer of the ownership of the personal incorporeal rights which occurs simultaneously.²³¹

2.4 Green bonds defined

Green bonds have grown over the years as a category of debt securities that have been issued by initially financial institutions, and later governments in the form of sovereign green bonds, and corporations with the intention of raising capital for climate change mitigation and adaptation projects.²³² Whilst having a dual role of achieving an environmental goal they must also meet their financial component which

²²⁵ Viljoen 1998 *SA Merc LJ* 17 with reference to case law states that cession on the completion of the contract of cession (the sale of the shares to the first respondent) and with the necessary intention present, beneficial ownership in the proprietary rights in the shares is passed to the first respondent. Incorporeal rights are transferred by way of cession and that there is no necessity, as between cedent and cessionary, that there be delivery of document which might evidence those rights. Mere consensus is sufficient to establish a cession. Cession takes place by means of an agreement of cession (agreement of transfer) concurrently with or preceded by, *oust cause*, which can be an obligatory agreement. A right of action which has been embodied in a document, such as a negotiable instrument, should be distinguished from a right of action which is evidenced in a document in respect of which a share certificate has been issued. Where the latter kind of right of action is ceded, neither delivery of the writing to the cessionary nor compliance by the cedent with the so-called doctrine of *all effort* is a requirement for the validity of the cession.

²²⁶ Intention to transfer.

²²⁷ Intention to acquire.

²²⁸ Viljoen 1998 *SA Merc LJ* 17.

²²⁹ Viljoen 1998 *SA Merc LJ* 17.

²³⁰ Viljoen 1998 *SA Merc LJ* 17; Malan and Pretorius *Malan on Bills of Exchange* 4.

²³¹ Viljoen 1998 *SA Merc LJ* 17. For an exposition on cession see Scott 2013 *SA Merc LJ* 513-533; Van Niekerk and Du Plooy 2016 *De Rebus* 51-52.

²³² Wang 2018 *Brooklyn J Corp Fin & Com L* 467.

is a return on investment and the ability to raise the required capital. Green bond investors do not always have an altruistic motive.²³³

The green bond market has spread into all debt market asset classes from corporate issuers (investment grade and high yield), sovereign issuers, asset-backed securities, project bonds, emerging market and private placements representing the overall debt market.²³⁴ They have been used for mobilisation of capital to finance environmentally-friendly projects with the majority of the finance going towards climate mitigation in the form of renewable energy projects.²³⁵ Green bonds belong to the broader class of climate-aligned bonds universe which is a category used to finance low carbon infrastructure.²³⁶

The issues of standardisation and harmonisation of green bond definitions is yet to be achieved.²³⁷ Defining green is directly linked to the objectives of the use of the green bonds.²³⁸ Julien Bras, an SRI portfolio manager at Allianz, stated in 2015:

Without some of the market or regulatory intervention, the risk is that the market is going to end up being a mixed bag, and then it will never recover its credibility...it's the easiest way to greenwash - all you have to do is come up with a couple of environmental projects, green stamp them, and pocket the funds allocate to those projects. It doesn't cost much [than the conventional bond] the need for [standardisation] on this market is self-evident and urgent - we need a definition of what is green.²³⁹

²³³ Park 2018 *Stanford JIL* 1.

²³⁴ EU 2019 2019 https://ec.europa.eu/info/publications/sustainable-finance-technical-expert-group_en; Report of the technical expert group (TEG) subgroup on Green Bond Standard Proposal for an EU Green Bond standard 17.

²³⁵ Talbot 2017 *Villanova ELJ* 128.

²³⁶ Wang 2018 *Brooklyn J Corp Fin & Com L* 470; CBI 2018 <https://www.climatebonds.net/resources/reports/bonds-and-climate-change-state-market-2018>. Climate-aligned bonds is a term used to describe the full universe of aligned outstanding bonds, i.e. from full aligned issuers, strongly aligned issuers and green bond issuers. Strongly aligned bonds are bond issuers where 75%-95% of revenues are derived from climate-aligned assets and green business lines 4.

²³⁷ Faske 2018 *Tulane ELJ* 293.

²³⁸ Banahan 2019 *Vermont LR* 865.

²³⁹ Trompeter 2017 *JSDLP* 7. The basis of "green" definitions can often be as a result of *ex ante* arguments or be based on certain specific indicators. They are therefore driven by implicit or explicit interpretations or technical and specific views. The qualitative or quantitative nature of the definitions is an attempt at grading the "greenness" of the criterion used.

There are principally two global regulatory systems or frameworks in place that provide guidance on the issuance of green bonds.²⁴⁰ These are the Green Bond Principles (GBP) and the Climate Bonds Standard (CBS).²⁴¹ The GBP were established by the International Capital Market Association (ICMA) based in Switzerland and several large investment banks which published their principles in 2014.²⁴² They are "voluntary process guidelines that recommend transparency and disclosure and integrity in the development of the Green Bond market by clarifying the approach for issuance of a Green Bond".²⁴³ The Climate Bonds Standards (CBS) were developed by the Climate Bonds Initiative (CBI) based in the United Kingdom, which is "an investor-focused not-for-profit organisation promoting large-scale investment in low-carbon activities".²⁴⁴ The Climate Bond Standard (CBS) establishes sector-specific standards for certification and is a two part standard that details the management and reporting processes.²⁴⁵ It also provides for a suite of sector criteria detailing what requirements assets must meet to be eligible for certification.²⁴⁶ The CBS as a voluntary organisation does not have monitoring mechanisms in place to enforce its principles or standards, progress is "assessed ...by the issuer".²⁴⁷ The GBP define "green bonds" as:

... any type of bond instrument where the proceeds will be exclusively applied to finance or re-finance, in part or in full, new and/or existing eligible Green Projects and which are aligned with the four components of the GBP.²⁴⁸

²⁴⁰ Wang 2018 *Brooklyn J Corp Fin & Com L* 469.

²⁴¹ Breen and Campbell 2017 *NRE* 18. See paras 3.6 and 3.6.4 in this regard.

²⁴² Breen and Campbell 2017 *NRE* 18.

²⁴³ ICMA 2018 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/Green-Bonds-Principles-June-2018-270520.pdf>.

²⁴⁴ CBI 2019 <https://www.climatebonds.net/standard/faqs>.

²⁴⁵ CBI 2018 <https://www.climatebonds.net/files/files/Climate%20Bonds%20Certification%20Standard%20Scheme.pdf> 2.

²⁴⁶ CBI 2018 <https://www.climatebonds.net/files/files/Climate%20Bonds%20Certification%20Standard%20Scheme.pdf> 2. Some of the assets listed by the CBI under Energy are (Wind, Solar Geothermal), under Transport (electric vehicles, rail) Utilities (water) Buildings (residential, commercial). Other assets are in development and have not been approved.

²⁴⁷ Breen and Campbell 2017 *NRE* 18.

²⁴⁸ ICMA 2018 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/Green-Bonds-Principles-June-2018-270520.pdf>.

The four core components are: (a) Use of proceeds; (b) Process for Project Evaluation and Selection; (c) Management of Proceeds; and (d) Reporting.²⁴⁹ The GBP do not define "green" but only refer to projects. Eligible projects include for example:

Renewable energy, energy efficiency, pollution prevention and control, environmentally sustainable management for living natural resources and land use, terrestrial and aquatic biodiversity and conservation, clean transportation, sustainable water and wastewater management, climate change adaptation, eco-efficient and/or circular economy adapted product, and green buildings that meet standards of certification at the regional, national and international level.²⁵⁰

The ICMA GBP environmental sustainability objectives of the project are communicated through "The Process for Evaluation and Selection and this is how the issuer determines how the project fits within the eligible Green Projects categories" and "related categories".²⁵¹ This potentially creates a very wide scope and may allow for a "sneaking-in" of non-eligible projects because the threshold for what constitutes green is not established.

The GBP have certain vague terms and inconsistencies which plague the integrity of green bond growth. There is over reliance on the issuer being able to self-label a bond green and the issuer is not legally bound to these principles.²⁵² It is after all a voluntary process. There is an opportunity for South Africa in government regulation to minimise greenwashing and potentially higher transaction costs and giving confidence to the market.

The Centre for International Climate and Environmental Research which is based in Oslo states that:

A Green Bond is a fixed income financial instrument issued with the aim of financing climate or environmentally friendly projects. A fixed-income instrument is a debt instrument where the issuer is obliged to pay back the money on a schedule

²⁴⁹ ICMA 2018 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/Green-Bonds-Principles-June-2018-270520.pdf>. See para 3.6.

²⁵⁰ Wang 2018 *Brooklyn J Corp Fin & Com L* 476.

²⁵¹ Faske 2018 *Tulane ELJ* 293.

²⁵² Banahan 2019 *Vermont LR* 859.

according to the terms of the bond. The issuer agrees to repay the bond plus a rate of return over a certain period.²⁵³

The International Finance Corporation defines green bonds as:

Fixed-income securities, both taxable and tax exempt, that raise capital for use in projects or activities with specific climate or environmental sustainability purposes. These bonds are structured the same way as standard bonds, with the same characteristics as standard bonds in terms of seniority, rating, execution process and pricing, but with proceeds dedicated to climate or environmental projects. The bonds carry the same rating as an issuer's other debt and are often structured under the issuer's medium term notes programs. With a few exceptions, the bonds are backed by the issuer's entire sheet balance so that investors are not exposed solely to the risk of the bond's underlying projects.²⁵⁴

The World Bank²⁵⁵ refers to a green bond as "debt security that is issued to raise capital specifically to support climate related or environmental projects", while the International Capital Market Association defines it as "any type of bond instrument where the proceeds will be exclusively applied to finance or re-finance in part or in full new and/or existing eligible Green Projects which follows the four Green Bond Principles".²⁵⁶

From the above it seems that green bonds:

- Are debt instruments (they retain their loan structure, recourse if borrower defaults);
- Are utilised to achieve sustainable development and the introduction of low carbon infrastructure;
- Have four core components, which are
 - i. uniqueness in their use of proceeds component,
 - ii. have a process for project evaluation,
 - iii. have a management of proceeds process, and
 - iv. a reporting structure;

²⁵³ CICERO 2016 <https://www.cicero.oslo.no/en/posts/single/CICERO-second-opinions> 8.

²⁵⁴ IFC 2016 <https://www.ifc.org/wps/wcm/connect/99854086-d728-42ba-a969-53d2fb889b89/EMCompass+Note+25+Green+Bonds+FINAL+12-5.pdf?MOD=AJPERES>.

²⁵⁵ The World Bank 2015 <http://documents.worldbank.org/curated/en/400251468187810398/What-are-green-bonds> 23.

²⁵⁶ ICMA 2018 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/Green-Bonds-Principles-June-2018-270520.pdf> 3.

- d) include a scheduled repayment plan.

There are different types of green bonds:

- (a) A Proceeds bond is a standard recourse-to-the issuer debt obligation for which the proceeds shall be credited to a sub-account, moved to a sub-portfolio or otherwise tracked by the issuer and attested to by a formal internal process that will be linked to the issuer's lending and investment operations for Eligible Projects and Assets.²⁵⁷
- (b) A Proceeds Revenue Bond is a non-recourse debt obligation in which the credit exposure in the bond is to the pledged cash flows of the revenue streams, fees, taxes etc., and the use of proceeds.²⁵⁸
- (c) A Project Bond can be utilised for a single or multiple Eligible Projects. The investor has direct exposure to the risk of the project(s) with or without potential recourse for the issuer.²⁵⁹
- (d) A Securitised Bond is collateralised by one or more specific Eligible Projects and Assets, including, but not limited to covered bonds, Asset Backed Securities ("ABS"), Mortgage-Backed Securities ("MBS"), and other structures. The first source of repayment is generally the cash flows of the assets.²⁶⁰

²⁵⁷ Climate Bonds Standard Version 2.1 5.

²⁵⁸ Climate Bonds Standard Version 2.1 5.

²⁵⁹ Climate Bonds Standard Version 2.1 5.

²⁶⁰ Climate Bonds Standard Version 2.1 5. An asset-backed security is an investment security – a bond or note - which is collateralised by a pool of assets, credit card receivables, home equity loans, and auto loans. The process of pooling securities is called securitisation. Although similar to mortgage-backed securities, asset backed securities are not collateralised by mortgage-based assets. A mortgage backed security also known as a "mortgage through certificates". Mortgage backed Securities (MBS) particularly residential MBS (RMBS), which are held largely off the balance sheet of the mortgage issuer and ring-fenced contractually within bankruptcy-remote special purpose vehicles (SPV). To be widely accepted as collateral, these issues need to be AAA-

Based on the above, and for the purpose of this thesis, the following definition of 'green bonds' is preliminarily formulated:

A green bond is a socially responsible investment, which meets the objectives of the socially conscious investor, is a financial mechanism or a debt instrument under which its use of proceeds is structured for the purpose of financing environmental, social and governance issues as well as financing low carbon infrastructure that meet the Green Bond Principles. Such bond provides for a financial return and is repayable over an agreed schedule and its proceeds are constantly evaluated subject to ESG principles within the African and South African context.

There is a need to establish drivers for green bonds to also understand their possibility and limitations which could inform the need for regulation.

2.5 Drivers of green bonds

There are various drivers for the introduction of and use of green bonds. For purposes of this study the following drivers are identified, namely:

- (a) Environmental and social consciousness;
- (b) Climate change;
- (c) Climate change mitigation;
- (d) Climate finance;
- (e) Sustainable development, and sustainable energy and environmental social governance (ESG).

rated. However, use of this type of asset as collateral fell back during the Great Financial Crisis because of contagion from MBS backed by sub-prime mortgages and rising default rates in some housing markets. Asset-backed securities (ABS) which are held off the balance sheet of the originator of the underlying assets and ring-fenced contractually within bankruptcy-remote SPV. Most investors require an AAA-rating on such assets. This type of asset also suffered during the Great Financial Crisis because of contagion from securities backed by collateral pools which included sub-prime mortgages or sub-prime MBS.

2.5.1 Environmental and social consciousness

Green bonds are, for example, regarded as instruments that can lead to a transition of greener global economies. The general global demand for green bonds has driven demand for environmentally friendly projects and initiatives.²⁶¹ This, for many of the corporates, has allowed them to meet their socially responsible obligations by investing in AAA rated investments.²⁶² The socially conscious investor has been attracted to this type of investment because of the dual purpose of the green bonds serving environmental and financial return objectives. Corporate issuance of green bonds has contributed significantly to green bond growth, driven by shareholder activism and investor demand.²⁶³ Consumer oversubscription has been a strong indication of the demand for green bonds.²⁶⁴ On the secondary market green bonds are highly illiquid and this can make them expensive.²⁶⁵ Generally investors hold onto them and this serves as a signal for growth of the market especially the issuer base.²⁶⁶ Their tax exempt status has allowed the growth of the renewable energy industry thereby providing fiscal incentives to aid in the fight against climate change.²⁶⁷ Green bonds are inherently similar to conventional bonds in terms of their structure and risk/return profile.²⁶⁸ They provide the same pricing to yield maturity to that of conventional "vanilla bonds" that is recent empirical studies show that there is a strong correlation between the yield maturity of green bonds and that of conventional bonds.²⁶⁹ In terms of ranking conventional bonds and green bonds are ranked *pari*

²⁶¹ Talbot 2017 *Villanova ELJ* 133.

²⁶² Talbot 2017 *Villanova ELJ* 134. According to the Fitch Ratings Agency AAA (highest credit quality) ratings denote the lowest expectation of default risk. They are assigned only in cases of exceptionally strong capacity for payment of financial commitments. This capacity is highly unlikely to be adversely affected by foreseeable events. Credit ratings range from the highest AAA to AA (very high credit quality), A (high credit quality), BBB (good credit quality), BB (speculative), B (highly speculative) CCC (substantial credit risk), CC (very high levels of credit risk), C (near default), and RD (restricted default).

²⁶³ Talbot 2017 *Villanova ELJ* 134.

²⁶⁴ Talbot 2017 *Villanova ELJ* 134.

²⁶⁵ Wang 2018 *Brooklyn J Corp Fin & Com L* 472.

²⁶⁶ Wang 2018 *Brooklyn J Corp Fin & Com L* 471.

²⁶⁷ Talbot 2017 *Villanova ELJ* 136.

²⁶⁸ Banga 2019 *JSFI* 20. See para 2.4.

²⁶⁹ Banga 2019 *JSFI* 20.

passu to each other which is in alignment with many investor's appetite for green bonds.²⁷⁰ This has attracted an investor who is akin to the strong environmental benefit without losing out on the financial return.²⁷¹ The acute financial investor has in recent years been able to understand the links between climate change as an investable return variable and financial risk or affecting financial stability.²⁷² This has seen the proactive nature of investors and policy makers implementing preventive measures such as climate risk stress tests aimed at assessing the exposure of financial institutions to climate change risks.²⁷³

Shareholders are being actively encouraged to move away from a model that purely focuses on profit maximisation to one that creates a financial value inclusive of social and environmental values.²⁷⁴ Millennials are included as drivers of green bonds with ninety two percent of them expressing interest in sustainable investing.²⁷⁵ This exponential growth has seen many institutional investors incorporating socially responsible investing into their portfolios and they are willing to pay a premium for them.²⁷⁶ Social attitudes and strategic solutions are recent drivers of green bonds.²⁷⁷ Driven in tandem and leveraging off each other because of the generational difference in age of the modern investor, certain issues such as climate change have become core to investment decision making.²⁷⁸

²⁷⁰ Banga 2019 *JSFI* 20. *Pari passu* (same rate or on an equal footing).

²⁷¹ Banga 2019 *JSFI* 20.

²⁷² Banga 2019 *JSFI* 20.

²⁷³ Banga 2019 *JSFI* 21.

²⁷⁴ Banga 2019 *JSFI* 21.

²⁷⁵ Faske 2018 *Tulane ELJ* 299.

²⁷⁶ Faske 2018 *Tulane ELJ* 299.

²⁷⁷ Ross 2014 file:///C:/Users/p10180869/Downloads/green-bond-drivers.pdf.

²⁷⁸ Ross 2014 file:///C:/Users/p10180869/Downloads/green-bond-drivers.pdf. The South African *National Climate Change Response White Paper* defines climate change as "an ongoing trend of changes in the earth's general weather conditions as a result of an average rise in the temperature of the earth's surface often referred to as global warming. This rise in the average global temperature is due, primarily, to the increased concentration of gases known as greenhouse gases (GHG) in the atmosphere that are emitted by human activities. These gases intensify a natural phenomenon called the 'greenhouse effect' by forming an insulating layer in the atmosphere that reduces the amount of the sun's heat that radiates back into space and therefore has the effect of making the earth warmer." The UNFCCC uses a somewhat different definition "... a change of climate, which is attributed directly or indirectly to human activity that alters the

2.5.2 Climate change

Climate change poses the greatest spectre of our generation. According to the Fifth Assessment Report by the IPCC, climate change is now said to be "unequivocal", as has been evidenced by increases in the global temperatures of the air and the oceans, and rising sea levels.²⁷⁹ The change of climate is mainly attributed to the emission of GHG and human activity.²⁸⁰ Energy generation and consumption is expressly stated by the UNFCCC as the main contributor to GHG emissions.²⁸¹ The implementation of new technologies in the form of renewables is encouraged in developing countries where there is considerable growth and demand for energy.²⁸² The *Paris Agreement* of 12 December 2015 was a universal climate change agreement and response to the threat posed by climate change requiring all parties to communicate ambitious GHG reduction targets to achieve long term global temperature goals of:

[H]olding the increase in the global average temperature to well below 2° C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5° C above pre-industrial levels, recognizing that this would significantly reduce the risks of impacts of climate change.²⁸³

composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods." This definition is, however, different also from that used by the IPCC which states that "climate change refers to a change in the state of the climate that can be identified (e.g., using statistical tests) by changes in the mean and/or the variability of its properties, and that persists for an extended period, typically decades or longer. It refers to any change over time, whether due to natural variability or as a result of human activity."

²⁷⁹ IPCC 2014 <https://www.ipcc.ch/report/ar5/> 2.

²⁸⁰ The climatically stable period of the Holocene in which human civilisations flourished and prospered after the last Ice Age is now endangered by the Anthropogenic influences of humans since the industrial period of the early 1800s. Humans in terms of the earth system are said to be approaching the "unsafe operating space" of the Anthropocene in geological history, the effects of which will be significant and widespread. The physical impacts of climate change are said to potentially have catastrophic ecological and economic consequences. The inextricable link between human consumption and insatiable thirst for fossil fuels has brought about immense human progress in material living conditions, longevity and other social benefits which saw the general advancement of human society. However, this has not been without consequence, the GHG emissions are a warning of an unpredictable future that demands a tempered approach to energy consumption exacerbated by the disproportionate impacts on developing countries. Whilst arguments can be made for who is responsible for GHG emissions, developing countries it is now known, will suffer disproportionately from a changed climate even though they contributed insignificantly to the problem. Froestad and Shearing 2017 *CLSC* 516; Kotzé, Humby and Rumble *Climate Change Law and Governance in South Africa* 2.

²⁸¹ Barnard 2018 *Energy for Sustainable Development* 2. See para 3.2.2.

²⁸² Barnard 2018 *Energy for Sustainable Development* 2.

²⁸³ *United Nations Paris Agreement* Article 2(a). Also see Park 2018 *Stanford JIL* 3. See para 3.2.2.

The magnitude of the climate change challenge faced by the global community is vast and amorphous.²⁸⁴ The *Paris Agreement*²⁸⁵ was ratified by 156 countries. The goal of the *Paris Agreement* is ambitious.²⁸⁶ A realignment of policy consistent with the *Paris Agreement* and in particular financial instruments with the objectives of sustainable development as a focal area are required urgently to create green economies of the future that are low carbon and resilient in nature.²⁸⁷ A transformative agenda is required in energy consumption on a global scale, one that transitions from a carbon based energy system to one that is low carbon and resilient.²⁸⁸ Supra-national strategies and action plans are required to integrate financial mechanisms that finance low-carbon infrastructure if global emissions are to be achieved as per the objective of the *Paris Agreement*.²⁸⁹

The United Nations Framework Convention on Climate Change (UNFCCC)²⁹⁰ was a result of protracted negotiations from as far back as the 1960s when the Keeling curve showed a notable rise in GHG emissions.²⁹¹ The aim of the UNFCCC was to prevent the dangerous effects of anthropogenic climate change. Negotiations between nations during the 1980s finally saw climate change being transformed from

²⁸⁴ Faske 2018 *Tulane ELJ* 295.

²⁸⁵ *United Nations Paris Agreement* 2015.

²⁸⁶ It is now contested whether it will be enough "ambition" refers to the collective will through domestic and international initiatives to cut global greenhouse gas emissions enough to meet 2° C. Various reports from the IPCC and the UNFCCC suggest that the global trajectory based on nationally determined contributions (NDCs) in Paris set the world on a 3° C or greater path. (IPCC 2018 <https://www.ipcc.ch/sr15/chapter/glossary/>.) The Special Report of the IPCC titled "Global Warming of 1.5° C" makes for interesting reading.

²⁸⁷ UNFCCC *Paris Agreement* commitments: (a) Holding the increase in the global average temperature to well below 2 degrees above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5 degrees above pre-industrial levels, recognising that this would significantly reduce the risks and impacts of climate change;(b) Increasing the ability to adapt to the adverse impacts of climate change and foster climate resilience and low greenhouse gas emissions development, in a manner that does not threaten food production;(c) Making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development.

²⁸⁸ In the words of Al Gore who has been one of the most if not the pre-eminent proponent of climate change, famously stated that "[t]he good news is, we have everything we need to know to respond to the challenge of global warming ... But we should not wait, we cannot wait, we must not wait". Quoted by Trompeter 2017 *JSDLP* 4.

²⁸⁹ Du Plessis and Kotzé 2014 *JAL* 146.

²⁹⁰ *United Nations Framework Convention on Climate Change* (UNFCCC), 1992.

²⁹¹ Carter and Barnard "Demystifying the global climate change regime" 3.

a scientific into a policy issue.²⁹² The adoption of the UNFCCC in 1992 was to culminate in the further adoption of additional commitments that led to the *Kyoto Protocol*²⁹³ in Japan five years later.²⁹⁴ The *Kyoto Protocol* was adopted in 1997 with the intention of operationalising the objectives of the UNFCCC which entered into force in 2005. The *Kyoto Protocol* was adopted in 1997 and only came into force in 2005 as a result of complex ratification processes.²⁹⁵ The *Kyoto Protocol* unlike the UNFCCC which only asked countries to adopt policies and measures on mitigation and report periodically, it however operationalises the UNFCCC by committing industrialised countries and economies in transition to limit and reduce GHG emissions in accordance with agreed targets.²⁹⁶ Binding targets are set in its Annex B on 37 industrialised countries and economies in transition and the European Union to reduce GHG emissions by at least 5 percent below 1990 levels in the commitment period of 2008 and 2012.²⁹⁷ In achieving sustainable development and the objectives of the Convention, three market-based mechanisms were established with the overall aim of assisting Parties included in Annex I in achieving compliance with their quantified emission limitation and reduction commitments.²⁹⁸ These market-based mechanisms included the clean development mechanism (CDM), joint implementation and emissions trading.²⁹⁹ The three market-based mechanisms are intended to encourage GHG abatement and increase green investment in the most cost-effective way primarily it is encouraged in the developing world.³⁰⁰

The UNFCCC and *Kyoto Protocol* address key international instruments through multi-lateral co-operation.³⁰¹ The primary objective of the UNFCCC was stabilising "greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous human interference with the climate system", this objective was adopted

²⁹² Carter and Barnard "Demystifying the global climate change regime" 3.

²⁹³ *Kyoto Protocol to the United Nations Framework Convention on Climate Change*, 1998.

²⁹⁴ Carter and Barnard "Demystifying the global climate change regime" 3.

²⁹⁵ UNFCCC 2020 https://unfccc.int/kyoto_protocol.

²⁹⁶ UNFCCC 2020 https://unfccc.int/kyoto_protocol.

²⁹⁷ *Kyoto Protocol to the United Nations Framework Convention on Climate Change*, 1998 Article 3.

²⁹⁸ *Kyoto Protocol to the United Nations Framework Convention on Climate Change*, 1998 Article 12.

²⁹⁹ Article 6 of the *Kyoto Protocol*.

³⁰⁰ UNFCCC 2020 https://unfccc.int/kyoto_protocol.

³⁰¹ Carter and Barnard "Demystifying the global climate change regime" 3.

in 1992 and came into effect in March 1994.³⁰² Two technical subsidiary bodies exist within the UNFCCC, these are the Subsidiary Body for Implementation (SBI) and the Subsidiary Body for Scientific and Technological Advice (SBSTA).³⁰³ A critical part of the institutional component of the UNFCCC is the UN Climate Change Secretariat with the task of pursuing the main objective of the UNFCCC and the 192 countries which are also party to the *Kyoto Protocol*.³⁰⁴

Climate change is a financial threat and poses significant financial implications which will require transformation of the dominant energy sector in GHG emissions in South Africa and beyond. The phenomenon of climate change is measurable, financially quantifiable (very often localised) and its effects have in many instances caused visible physical effects on the environment and humans. The erratic rainfall patterns and rising temperatures are evidential of the negative physical impacts of climate change in South Africa.³⁰⁵ These effects are impacting on health, causing floods, air contamination, depletion of biodiversity as a result of environmental variability and depletion of water resources which in turn affects food security.³⁰⁶ The IPCC has already shown through its latest report that unless dramatic corrective action is taken there is a possibility of mass migration of people from affected regions to those less affected.³⁰⁷

The IPCC defines "climate vulnerability" as "the degree to which a system is susceptible to, and unable to cope with, adverse effects of climate stress, including climate variability and extremes".³⁰⁸ Many developing countries, most of which are in Africa, are vulnerable to climate change as a result of their strong economic dependency on climate-related activities, products and low adaptive capacity.³⁰⁹ South Africa is said to be extremely vulnerable and exposed to climatic impacts

³⁰² UNFCCC 1992 Article 2.

³⁰³ UNFCCC 1992 Article 9.

³⁰⁴ UNFCCC 1992 Article 8.

³⁰⁵ Rankoana and Mothiba 2015 *AJPHRD* 248.

³⁰⁶ Rankoana and Mothiba 2015 *AJPHRD* 248.

³⁰⁷ Banahan 2019 *Vermont LR* 842.

³⁰⁸ ACPC 2013 <https://www.unclearn.org/wp-content/uploads/library/uneca21.pdf> 1.

³⁰⁹ ACPC 2013 <https://www.unclearn.org/wp-content/uploads/library/uneca21.pdf> 1.

aggravated by its socio-economic and environmental context.³¹⁰ South Africa as a water stressed country, is confronted with weather variability and cyclical droughts that will be affected by thunderstorms that have the potential of causing massive soil erosion and run-off.³¹¹

An explicit message was sent out in 1992 when the UNFCCC stated that developed countries had done the most to cause climate change and therefore had the biggest responsibility for combatting it.³¹² The complexity of climate change in South Africa is compounded by and attributable:

... to the high levels of uncertainty about its effects; wide-spread socio-economic decay among poor and marginalised urban and rural communities; lack of basic services and ill-health; the need for vigorous economic expansion and the country's concomitant reliance on fossil fuels; as well as the need to protect many sensitive (often unique) ecosystems, water resources and biodiversity.³¹³

South Africa is in an unenviable position of being the largest emitter of GHG on the African continent because of its reliance on coal-generated electricity, at a time when it has made international commitments to reduce its GHG emissions. Developed countries committed to support developing countries with "new and additional" financial resources to cover full incremental costs of agreed mitigation measures, the cost of adaptation and the cost of the preparation of their national communications.³¹⁴ Included in this was the cost of transfer of technology, which in part has not materialised but would have assisted with the mitigation and adaptation process.

The unintended consequences have been that developing countries are unable to access technology and some of the funds available through the different UN initiatives. Further to this, has been a lack of the required technical capacities to deal

³¹⁰ *National Climate Change Response White Paper* 2012 8.

³¹¹ *National Climate Change Response White Paper* 2012 8.

³¹² UNFCCC 1992 https://unfccc.int/files/essential_background/background_publications_htmlpdf/application/pdf/conveng.pdf 2.

³¹³ Du Plessis and Kotzé 2014 *JAL* 146.

³¹⁴ Markandya, Galarraga and Rübbelke *Climate Finance* 25.

with the bureaucratic burdens associated with the proliferation of diverse funds with their different governance procedures and eligibility conditions.³¹⁵

The Fifth Assessment Report on climate change has confirmed that human activity since 1951 and 2010 saw more than half of the observed global temperature increase occur in this period.³¹⁶ What is certain from the IPCC is that:

... the more human activities disrupt the climate, the greater the risk of severe, pervasive and irreversible risks to people and ecosystems.³¹⁷

The International Energy Agency (IEA) has provided estimates that global demand for energy will significantly grow by approximately 60% by 2030 with two-thirds of this growth coming from developing countries led by China and India where this growth will predominantly occur.³¹⁸ Between 1971 and 2002 the rich Organisation for Economic Co-operation and Development (OECD) countries increased their energy consumption by a factor of 2.1 whilst in China and India, consumption in terms of total primary use significantly increased three-fold in the same period.³¹⁹ Whilst growth may be apparent in developing countries, the stark difference is seen in the *per capita* basis of consumption between the developed OECD countries and the developing countries.³²⁰ Growth in developing countries can arguably be said to be incremental. Only one-fifth of what OECD countries consume *per capita* will be utilised by developing countries.³²¹ Developing economies invariably, with their use of cheap and readily available fossil fuels as drivers of their economic progress, will need reorientation of their energy systems if GHG emissions are to be curbed.³²²

³¹⁵ Markandya, Galarraga and Rübbelke *Climate Finance* 25

³¹⁶ Kotzé *et al* "Setting the scene" 3. Conceivably the increase of the population after the Second World War as economies of Europe built up their industrial markets and emerged from the deep Depression of the thirties and repositioned their colonial interests caused the spike in GHG emissions as they built their economies.

³¹⁷ Kotzé *et al* "Setting the scene" 3.

³¹⁸ Sagar, Oliver and Chikkatur 2006 *Vermont JEL* 75.

³¹⁹ Sagar, Oliver and Chikkatur 2006 *Vermont JEL* 75.

³²⁰ Sagar, Oliver and Chikkatur 2006 *Vermont JEL* 74.

³²¹ Sagar, Oliver and Chikkatur 2006 *Vermont JEL* 74.

³²² Sagar, Oliver and Chikkatur 2006 *Vermont JEL* 88.

Several pertinent issues arise for developing countries in terms of GHG emissions and their energy industries, foremost is the cost implications of the transition to technologies to be used in the reduction of emissions. This implementation of low carbon and resilient infrastructure in the generation of energy is often influenced and restricted by economic, political, technical, financial and behavioural barriers.³²³ The mitigation of GHG is only possible through the implementation of new cheaper technologies and practices that move away from the old traditional sources that created the current problem faced by the globe or in the first place. This is urgently required. These technologies need to be more efficient in their conversion of the use of energy, low GHG-emitting technologies (it would appear this is inevitable), carbon capture and storage and improvements in land-use change and forestry practices will drive the reduction of GHG in the atmosphere.³²⁴

Globally the largest GHG emissions have come from the supply of energy between 1970 and 2004.³²⁵ Transport, industry and commercial buildings have made less significant contributions with even lower growth from forestry and agriculture.³²⁶ This thesis focuses on energy-use as an area of GHG mitigation through the financing of renewables by green bonds and how mitigation in this space can be changed from a dominant fossil fuel base to one that is low carbon and resilient.

Overcoming the barriers previously stated requires a range of actions, such as overcoming some of the institutional capacity issues and technical limitations that developing countries are faced with.³²⁷ Very often political will is lacking in this regard primarily in the view of the author, because politicians have vested interests in coal fired power plants, the contracts thereof or the transportation or distribution of

³²³ Sagar, Oliver and Chikkatur 2006 *Vermont JEL* 90.

³²⁴ Sagar, Oliver and Chikkatur 2006 *Vermont JEL* 90.

³²⁵ IPCC 2007 <https://www.ipcc.ch/assessment-report/ar4/> 36.

³²⁶ IPCC 2007 <https://www.ipcc.ch/assessment-report/ar4/> 36.

³²⁷ Sagar, Oliver and Chikkatur 2006 *Vermont JEL* 91.

coal.³²⁸ In the context of South Africa like other developmental states, support is required to make the various technologies more accessible to consumers.³²⁹

There is pressure in South Africa to transition to renewables primarily driven by climate change targets of 10 000 gigawatt hours from renewables in the *White Paper on Renewable Energy* of 2003³³⁰ but also driven by the exponential drop in costs of renewables over the years.³³¹ Research and development with adequate funding could lower the costs of these technologies by creating localised and ultimately encouraging local manufacturing content thereby building on skills and jobs.³³²

South Africa's future climate is dependent upon action taken as a consequence of past anthropogenic emissions and future anthropogenic emissions as well as natural climatic variability.³³³ Under low mitigation futures, South Africa faces drastic impacts as a result of climate change.³³⁴ Temperature ranges of 4 degrees to 6 degrees are projected for the western, northern and central parts of the country.³³⁵ An effective response would require a common commitment by all countries because of the transboundary nature of the problem. The implication is therefore "an urgent and fundamental departure from business as usual".³³⁶ South Africa's development pathway will to a large degree influence its ability to mitigate climate change having considered such variables as population growth, economic development as well as technology and innovation.³³⁷ Mitigate it must, however, as reported in the Stern

³²⁸ Joubert 2019 <https://energytransition.org/2019/02/south-africas-fossil-fuelled-economy/>.

³²⁹ DOE 2019 <https://www.iea.org/policies/7888-south-africas-low-emission-development-strategy-sa-leds-2050> 7.

³³⁰ See para 4.2.2.

³³¹ Chevallier "South Africa's Dilemma" 158.

³³² DOE 2017 <http://www.energy.gov.za/files/media/Pub/2017-State-of-Renewable-Energy-in-South-Africa.pdf> 104.

³³³ IPCC 2014 <https://www.ipcc.ch/report/ar5/> 10.

³³⁴ DEA 2018 https://www4.unfccc.int/sites/SubmissionsStaging/NationalReports/Documents/679280451_South%20Africa-NC3-2-Appendices%20ACD%20of%20the%20TNC%20of%20South%20Africa.pdf 90.

³³⁵ DEA 2018 https://www4.unfccc.int/sites/SubmissionsStaging/NationalReports/Documents/679280451_South%20Africa-NC3-2-Appendices%20ACD%20of%20the%20TNC%20of%20South%20Africa.pdf 123.

³³⁶ IPCC 2014 <https://www.ipcc.ch/report/ar5/> v.

³³⁷ DEA 2018 https://www4.unfccc.int/sites/SubmissionsStaging/NationalReports/Documents/679280451_South%20Africa-NC3-2-Appendices%20ACD%20of%20the%20TNC%20of%20South%20Africa.pdf 125.

Report which states that the cost of inaction will far outweigh the cost of taking action.³³⁸

Financial risks and liability risks could drive the shift towards sustainable business decision making shifting from the lethargy of business as usual approach which in many regards has created the current problem of climate change.³³⁹ These corporate risks could have the potential of decimating the balance sheets of corporates.³⁴⁰ The triple convergence of environmental, social and financial aspects could allow for greater integration as sound business sense than simply as legal compliance.³⁴¹ In a best case scenario credibility of the growth of the green bond market may very well be dependent upon independent reviews and standards if government involvement is not forthcoming to assist in climate change mitigation. Before climate finance can be discussed it is necessary to determine what climate mitigation is.

2.5.3 Climate Change mitigation

The UNFCCC defines mitigation of climate change as a:

... human intervention to reduce the sources or enhance the sinks of greenhouse gases (GHG). This report also assesses human interventions to reduce the sources of other substances which may contribute directly or indirectly to limiting climate change, including, for example, the reduction of particulate matter emissions that can directly alter the radiation balance (e.g., black carbon) or measures that control of carbon monoxide, nitrogen oxides, Volatile Organic Compounds and other pollutants that can alter the concentration of tropo-spheric ozone which has an indirect on the climate.³⁴²

The IPCC in its Third Assessment Report of 2001 defines "mitigation" as:

... an anthropogenic intervention to reduce the anthropogenic forcing of the climate system (and) includes strategies to reduce greenhouse gas sources and emissions and enhance greenhouse gas sinks.³⁴³

³³⁸ Odeku and Meyer 2010 *JAL* 159-183. See para 5.4.1.

³³⁹ Sjaafjell 2018 *Deakin LR* 42.

³⁴⁰ Sjaafjell 2018 *Deakin LR* 42.

³⁴¹ Sjaafjell 2018 *Deakin LR* 50.

³⁴² IPCC 2014 <https://www.ipcc.ch/report/ar5/> 125.

³⁴³ IPCC 2001 https://library.wmo.int/index.php?lvl=notice_display&id=333.

In a later report, published on 8 October 2018, the IPCC in the glossary of its Special Report: Global Warming of 1.5⁰ C defines "mitigation" as:

A change in the state of the climate that can be identified (e.g., by using statistical tests) by changes in the mean and/or variability of its properties and that persists for an extended period, typically decades or longer. Climate change be due to natural internal processes or external forcings such as modulations of the solar cycles, volcanic eruptions and persistent anthropogenic changes in the composition of the atmosphere or in land use.³⁴⁴

South Africa's development pathway will to a large degree influence its ability to mitigate climate change having considered such variables as population growth, economic development as well as technology and innovation.³⁴⁵

The UNFCCC has primarily two objectives in the mitigation of GHG (which should be seen in the context of reducing the most significant pollutants first), these are:

- limiting or reducing anthropogenic GHG emissions by sources;³⁴⁶ and
- preserving or enhancing sinks and reservoirs of GHG.³⁴⁷

Article 4 of the UNFCCC places general commitments on Parties to mitigate climate change as provided for in Article 4.1 (for all Parties) whilst the more specific commitments are made in Article 4.2 with differentiation done by classification of whether a country is in Annex I or Annex II groupings. Article 4.2 as stated above, applies to the 36 developed countries which are classified as Annex 1 countries, South Africa is an Annex II country.³⁴⁸

³⁴⁴ IPCC 2018 <https://www.ipcc.ch/sr15/chapter/glossary/>.

³⁴⁵ DEA 2018 https://www4.unfccc.int/sites/SubmissionsStaging/NationalReports/Documents/679280451_South%20Africa-NC3-2-Appendices%20ACD%20of%20the%20TNC%20of%20South%20Africa.pdf 125.

³⁴⁶ IPCC 2001 https://library.wmo.int/index.php?lvl=notice_display&id=333. A "sink" is defined as "any process, activity or mechanism which removes a greenhouse gas from the atmosphere" Ch 11 on 74.

³⁴⁷ UNFCCC 2006 <https://unfccc.int/resource/docs/publications/handbook.pdf>. A "reservoir" is defined as "a component or components of the climate system where a greenhouse gas or a precursor of a greenhouse gas is stored" Ch 11 on 74.

³⁴⁸ Article 4(1)(b) however does provide for the formulation, implementation, publication and regular update of mitigation programmes.

Certain key guiding principles laid down at the Rio Declaration form a critical part of the UNFCCC. Article 3.1 of the UNFCCC obliges all countries to mitigate against climate change by stating that "The Parties should protect the climate system for the benefit of present and future generations of humankind, on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities" (CBDR).³⁴⁹ Article 3 of the UNFCCC further goes onto set out key principles, these being the principle of intergenerational equity, the principle of common but differentiated responsibilities, the precautionary principle, sustainable development and international co-operation.³⁵⁰ The CBDR principle has two fundamental elements, primary of which is the protection of the environment at the national, regional and global levels.³⁵¹ The second part is the need to take into account the different circumstances of the contributing parties in their abilities to prevent, reduce and control the threat.³⁵² The CBDR sought to address the disproportionality which existed between developed and developing countries in terms of global "climate change liability" regarding their mitigation and adaptation.³⁵³ It is recognised that the transition of developing countries from carbon-based sources of energy to more greener energy, will require the "application of new technologies on terms which make such an application economically and socially beneficial".³⁵⁴

The general expectation is that Annex I countries must reduce their emissions to 1990 levels and should provide financial assistance to developing countries in addition to any other financial assistance already provided.³⁵⁵ Article 6.4 of the UNFCCC set up a mechanism that would contribute towards the mitigation of GHG by producing

³⁴⁹ Article 3(1), UNFCCC 1992.

³⁵⁰ Article 3(1), UNFCCC 1992.

³⁵¹ Article 3(1), UNFCCC 1992.

³⁵² Article 3(1), UNFCCC 1992.

³⁵³ Carter and Barnard "Demystifying the global climate change regime" 3.

³⁵⁴ Article 3 of UNFCCC 1992. A major distinction between the *Protocol* and the Convention was that, while the convention encouraged industrialised countries to stabilise GHG emissions, the protocol committed them to do so.

³⁵⁵ Article 4, and Article 4(3)-(6), UNFCCC Annex I countries it is expected as the largest emitters of GHG would do the most to cut down on emissions, these countries belong to the OECD. There are variances in economic ability between these OECD countries, as some are said to be "economies in transition" these being predominantly countries from Central and Eastern Europe.

mitigation outcomes whilst also supporting sustainable development. The aim of the mechanism is:

- To promote the mitigation of GHG emissions while fostering sustainable development;
- To incentivise and facilitate participation in the mitigation of GHG emissions by public and private entities authorised by a Party;
- To contribute to the reduction of emission levels in the host Party, which will benefit from mitigation activities resulting in emissions reductions that can also be used by another Party to fulfil nationally determined contribution; and
- To deliver an overall mitigation in global emissions.³⁵⁶

South Africa as signatory to the UNFCCC committed to:

- Prepare and periodically update a national inventory of GHG emissions and sinks;³⁵⁷
- Formulate and implement national and, where appropriate, regional programmes to mitigate climate change and facilitate adequate adaptation to climate change;³⁵⁸
- Promote and cooperate in the development, application and diffusion of technologies, practices and processes that control, reduce or prevent anthropogenic emissions of GHG;³⁵⁹ and
- Promote sustainable management and promote and cooperate in the conservation and enhancement of sinks and reservoirs of all GHG.³⁶⁰

At the 13th Plenary held in Bali, Indonesia 2007, South Africa announced to the world that it was prepared to undertake ambitious mitigation actions that were measurable, reportable and verifiable.³⁶¹ In 2009 the then South African President made mitigation

³⁵⁶ Article 6.4 UNFCCC.

³⁵⁷ *National Climate Change Response White Paper 9.*

³⁵⁸ *National Climate Change Response White Paper 9.*

³⁵⁹ *National Climate Change Response White Paper 9.*

³⁶⁰ *National Climate Change Response White Paper 9.*

³⁶¹ Gilder and Swanepoel "Climate change" 764.

commitments at the National Climate Summit in which there would be collectively a result of 34 percent and 42 per cent deviations from the business as usual emissions trajectory by 2020 and 2025 respectively.³⁶² This was in accordance with Article 4.7 of the UNFCCC in which such an outcome was dependent upon developed countries meeting their financial obligations, capacity-building, technology development and technology transfer in support of developing countries as they implement their mitigation strategies.³⁶³ The strategic policy direction announced by the then President ultimately informed the National GHG Emissions Trajectory Range which projects emissions to 2050 and this is to be used to benchmark against mitigation action.³⁶⁴ The National GHG Emissions Trajectory Range is a reflection of the countries fair contribution in an effort to limit anthropogenic climate change to well below the 2°C above pre-industrial levels agreed upon at the *Paris Agreement*. It also provides insight to the "peak, plateau and decline trajectory".³⁶⁵

South Africa's successful mitigation strategies are likely to place it in a better global position against a backdrop of existing climate change related hazards thereby deriving economic benefits such as investment into renewable energy infrastructure. South Africa is vulnerable to the effects of climate change as a Non-Annex I country and because of its overdependence on coal, it needs to attract investment into the energy sector so as to make it a more attractive and stable environmental investment destination. South Africa has not assumed a quantified emissions limitation and reduction objectives (QELRO) for GHG.³⁶⁶ This places it in an awkward position, and in a precarious position in relation to the effects of climate change. Electricity generation consumes just over 90 per cent of the low-grade (with higher sulphur content) coal produced and this makes the country the highest emitter of GHG on the continent.³⁶⁷ The potential of mitigation strategies could stimulate economic growth and create renewable energy associated industries, diversifying energy

³⁶² *National Climate Change Response White Paper* 25.

³⁶³ *National Climate Change Response White Paper* 25.

³⁶⁴ *National Climate Change Response White Paper* 27.

³⁶⁵ *National Climate Change Response White Paper* 27.

³⁶⁶ Du Toit and Gilder 2010 *CCLR* 386-391.

³⁶⁷ Du Toit and Gilder 2010 *CCLR* 386-391.

sources, indirectly remove trade barriers, facilitate energy sector investment and promote demand-side management.³⁶⁸ Adequately financed, with technological and capacity-building support, South Africa's GHG emissions could peak between 2020 and 2025, plateau for approximately a decade and decline in absolute terms thereafter.³⁶⁹

Carbon dioxide forms over 80 per cent of GHG emissions, which makes South Africa have an abnormally higher *per capita* emission rate than other comparative countries under BRICS (Brazil, Russia, India and China).³⁷⁰ Deforestation as a result of land-use change is insignificant as a major contributor to emissions other than most developing countries. This disproportionate emission rate places an onus on South Africa and therefore mitigation should be the priority for any economic growth plans. The energy sector, in particular electricity generation, contributes the largest amounts of GHG emissions and thereby makes a strong argument for renewable energy use.

This makes South African industries one of the most carbon intense economies globally.³⁷¹ To reiterate energy supply in the form of electricity generation and liquid fuels and in their use in the mining sector, industrial manufacture and transportation of goods create the largest GHG emissions and it is in these areas that the greatest attention for mitigation strategies one is required.³⁷² There are two policies that focus on mitigation strategies in South Africa, namely the National Climate Change Strategy (NCCS) (2004) and the relatively more recent Long-Term Mitigation Scenario (LTMS) (2007). An analysis of the more recent strategy will be assessed as it is the latest strategy.

In the National Climate Change Response Strategy for South Africa to Address Climate Change (NCCRS) government outlines steps to be taken by the state and other role

³⁶⁸ Odeku and Meyer 2010 *JAL* 159-183.

³⁶⁹ *National Climate Change Response White Paper* 25.

³⁷⁰ *National Climate Change Response White Paper* 26.

³⁷¹ Du Toit and Gilder 2010 *CCLR* 386-391.

³⁷² *National Climate Change Response White Paper* 26.

players as a response to climate change.³⁷³ This document gave rise to the Long-Term Mitigation Scenarios, a national inventory of GHG, and the Technology Needs Assessment (TNA) Report.³⁷⁴ The government commissioned the LTMS with the aim of informing cabinet with "sound scientific analysis" about long-term options for the development of long-term climate policy.³⁷⁵ This sound scientific analysis informs South African negotiators under the UNFCCC, with clear and mandated positions in their negotiations.³⁷⁶ Future climate action would be informed by realistic strategies and better understanding of the data by the various stakeholders of the issues.³⁷⁷

In aligning the strategy to formulate and implement an action plan, three key areas needed to be coordinated, namely:

- Technology: Wider deployment of existing climate-friendly technology is necessary, together commercialisation of emerging technologies and spending at scale on research and development of new technology.³⁷⁸
- Investment: The sources, mechanisms, and extent of investment in a low-carbon society need to be found and actively pursued.³⁷⁹
- Policy: The country will need clear guidance through policy frameworks that send sustained and legally enforced messages to the markets.³⁸⁰

³⁷³ Steenkamp and Naudé 2018 *African J Bus Eth* 70-84.

³⁷⁴ Steenkamp and Naudé 2018 *African J Bus Eth* 70-84.

³⁷⁵ Scenario Building Team 2007 https://open.uct.ac.za/bitstream/handle/11427/16804/Scenario_Building_Team_Long_Term_Mitigation_2007.pdf?sequence%20=%201.

³⁷⁶ Scenario Building Team 2007 https://open.uct.ac.za/bitstream/handle/11427/16804/Scenario_Building_Team_Long_Term_Mitigation_2007.pdf?sequence%20=%201.

³⁷⁷ Scenario Building Team 2007 https://open.uct.ac.za/bitstream/handle/11427/16804/Scenario_Building_Team_Long_Term_Mitigation_2007.pdf?sequence%20=%201.

³⁷⁸ Scenario Building Team 2007 https://open.uct.ac.za/bitstream/handle/11427/16804/Scenario_Building_Team_Long_Term_Mitigation_2007.pdf?sequence%20=%201.

³⁷⁹ Scenario Building Team 2007 https://open.uct.ac.za/bitstream/handle/11427/16804/Scenario_Building_Team_Long_Term_Mitigation_2007.pdf?sequence%20=%201.

³⁸⁰ Policy: The country will need clear guidance through policy frameworks that send sustained and legally-enforced messages to the markets.

Some of the key findings of the LTMS were that the gap between South Africa's emissions position and where the country needed to be heading was too large.³⁸¹ A massive investment in technology would be required to transform some of the known sectors contributing the most emissions.³⁸² In terms of electricity generation and the technological choices available to South Africa for its generation, the LTMS proposes plausible choices:

- If resolution of nuclear waste material can be achieved, South Africa should pursue a nuclear build programme by debt raising. This is clearly not a plausible plan in the current economic environment;³⁸³ and
- Investing in renewables is postulated as an option. Time and scale have made this option in the view of the author the most viable because of continual cost reductions in renewable technologies.³⁸⁴

The LTMS was followed by other documents, such as Towards a Resource-efficient, Low Carbon and Pro-employment Growth Path and Background Information and Document to Facilitate the Climate Change Policy Engagement (which seems to have

³⁸¹ Scenario Building Team 2007 https://open.uct.ac.za/bitstream/handle/11427/16804/Scenario_Building_Team_Long_Term_Mitigation_2007.pdf?sequence%20=%20125. The LTMS then posed two important questions, which were "(a) Why should South Africa be concerned with the mitigation of greenhouse gases? and (b) What options for mitigation are available, how much can each option reduce emissions, and at what cost? The LTMS in addition proposed two divergent scenarios in regard to GHG emission: growth without constraints (GWC); and required by science (RBS). This was started with 2003 being the base year and 2050 the horizon. The two postulated positions meant that the RBS would lead to a reduction of emissions by 30-40 per cent below 2003 levels by 2050, and GWC scenario would result in there being no effort to reduce emissions. The RBS became the default position with four critical scenarios being implemented, namely the "start now", "scale up", "use the market" and reach for the goal". South Africa along with other major emitters in the developing world like India and China in particular, it is suggested would take responsibility and quantifiable mitigation action commensurate with their level of development and national circumstances into consideration when factoring the RBS. At 1300 Mt CO₂-eq which is more than three times the annual emissions rate of 446 Mt in 2003.

³⁸² Scenario Building Team 2007 https://open.uct.ac.za/bitstream/handle/11427/16804/Scenario_Building_Team_Long_Term_Mitigation_2007.pdf?sequence%20=%20125.

³⁸³ Scenario building Team 2007 https://open.uct.ac.za/bitstream/handle/11427/16804/Scenario_Building_Team_Long_Term_Mitigation_2007.pdf?sequence%20=%20129.

³⁸⁴ Scenario Building Team 2007 https://open.uct.ac.za/bitstream/handle/11427/16804/Scenario_Building_Team_Long_Term_Mitigation_2007.pdf?sequence%20=%20129. The LTMS was developed by a team of experts that formulated it with some extensive scientific modelling and projections done to factor in such variables as carbon tax and carbon capture and storage. The LTMS has been relied upon as an authoritative basis for the development of a climate change policy.

informed the *Climate Change Green Paper*) indicating governments position in shifting towards low carbon technologies.³⁸⁵

The regulatory regime acts as a driver of climate change mitigation by encouraging cooperative integration of mitigation strategies. The benchmarking of emissions by the National GHG Emissions Trajectory Range is an example of mitigation action being taken by the government in reaching its projected 2050 targets. However, scale is required and to meet its international obligations South Africa will require capital investments to mitigate GHG and build low carbon infrastructure such as renewable energy plants thereby decarbonising the energy sector. This capital investment will require much more than what the CDM³⁸⁶ can provide for the country. The primary objective of mitigation is to curtail GHG emissions into the atmosphere, therefore financial instruments that are aligned with emission reduction such as green bonds become very plausible as a means of financing the low-carbon infrastructure required for mitigation. Again, to reiterate, the more plausible long-term solution is green bonds (which by their nature are long term investments) which can generate the sort of capital investment required to expand the energy grid thereby providing accessible energy to rural communities. The green bond structure ensures that the type of infrastructure built is low carbon and meets the requirements of the green bond principles through the review mechanism which ensures compliance by regular reporting on the infrastructure built. Climate finance is discussed in the following paragraph as a broader financial instrument as introduced by the UNFCCC, which has given rise to more focused financial instruments such as green bonds.

2.5.4 Climate finance

As stated above, green bonds are sometimes regarded as another form of climate finance. Climate finance it is said by some scholars has managed to "attract increasing

³⁸⁵ Du Toit and Gilder 2010 *CCLR* 386-391.

³⁸⁶ The Clean Development Mechanism is defined in Article 12 of the *Protocol*, in terms of its purpose as assisting Parties not included in Annex I in achieving sustainable development and in contributing to the ultimate objective of the Convention, and to assist Parties included in Annex I in achieving compliance with their quantified emissions limitation and reduction commitments under Article 3. Projects can earn saleable certified emission reduction (CER) credits, each equivalent to one tonne of carbon dioxide, which can be counted towards meeting Kyoto targets.

attention in scholarly literature, it however remains under-researched and under-theorised, and stands in need of further integration of and dialogue between different approaches to the topic".³⁸⁷ As a central and necessary element of the climate change regime the UNFCCC stipulates that, in accordance with the principle of "common but differentiated responsibilities and respective capabilities" developed countries shall "provide new and additional financial resources" to assist developing countries in fulfilling their obligations under the Convention as per Article 11.³⁸⁸

The genesis of the term "climate finance" starts in 1994 when developing countries demanded that increased funding be provided by developed countries for the implementation of mitigation and adaption actions.³⁸⁹ The design and origin of the finance component was formed by previous Multilateral Environmental Agreements (MEAs) with special emphasis on the 1987 *Montreal Protocol on Substances that Deplete the Ozone Layer*.³⁹⁰ Climate finance's primary aim was to assist many developing nations confront climate change through mitigation and adaption strategies. Article 11.2 of the *Kyoto Protocol* provided the impetus for the Parties to create a mechanism that would allow developed countries to support the financial requirements of developing countries in implementing projects that would address climate change impacts.³⁹¹ Provisions for technology transfer and capacity building would have been financed by this mechanism in the form of a Fund which would have assisted developing countries meet effective mitigation and adaptation actions.³⁹² The UNFCCC defines climate finance as:

National or transnational financing drawn from public, private and alternative sources of financing-that seeks to support mitigation and adaptation actions that will address climate change.³⁹³

³⁸⁷ Pickering, Betzold and Skovgaard 2017 *Int'l Environ Agreements* 1. This is clearly evident in the amount of research material available.

³⁸⁸ Pickering, Betzold and Skovgaard 2017 *Int'l Environ Agreements* 4.

³⁸⁹ Gichira, Agwata and Muigua 2014 *JL Pol'y & Globalization* 2.

³⁹⁰ Gichira, Agwata and Muigua 2014 *JL Pol'y & Globalization* 7.

³⁹¹ Gichira, Agwata and Muigua 2014 *JL Pol'y & Globalization* 2.

³⁹² Gichira, Agwata and Muigua 2014 *JL Pol'y & Globalization* 2.

³⁹³ Introduction to climate finance 2019 <https://unfccc.int/topics/climate-finance/the-big-picture/introduction-to-climate-finance>.

The IPCC acknowledges that there is no agreed upon definition on climate finance but goes on to broadly define climate finance as:

Financial resources devoted addressing climate change globally and to financial flows to developing countries to assist them in addressing climate change and Climate-related financial flows within or between countries that are dedicated to both mitigation and adaptation.³⁹⁴

The UNFCCC Standing Committee on Finance in its 2018 Biennial Assessment and Overview of Climate Finance Flows Technical Report states that climate finance:

... aims at reducing emissions and enhancing sinks of greenhouse gases and aims at reducing vulnerability of, and maintaining and increasing the resilience of, human and ecological systems to negative climate change impacts.³⁹⁵

Several categories of climate finance are provided, namely (a) incremental costs, (b) incremental investments, (c) total climate finance, (d) private climate finance and (e) public climate finance.³⁹⁶ Incremental costs are the costs of the incremental investment and the change of operating maintenance costs for mitigation or adaptation projects in comparison to a reference project.³⁹⁷ It can be calculated as the difference of the net present values of the two projects.³⁹⁸ Incremental investment is the extra capital required for the initial investment for a mitigation or adaptation project to a reference project.³⁹⁹ Total climate finance refers to all financial flows expected effect is to reduce net GHG emissions/or to enhance resilience to the impacts of climate variability and the projected climate change.⁴⁰⁰ This covers private and public funds, domestic and international flows and expenditures for mitigation and adaptation to current climate variability as well as

³⁹⁴ IPCC 2014 <https://www.ipcc.ch/report/ar5/> 117-130.

³⁹⁵ UNFCCC 2018 <https://unfccc.int/sites/default/files/resource/2018%20BA%20Technical%20Report%20Final%20Feb%202019.pdf> 25. The UNFCCC 2018 Technical Report confirms the definition of climate finance as per the earlier 2014 and 2016 Biennial Assessment and Overview of Climate Finance Flows Technical Reports. In terms of the *Paris Agreement* Article 2.1(c) refers to finance flows that are "consistent with", rather than aimed at, a pathway towards low-GHG and climate-resilient development.

³⁹⁶ Gupta *et al* 2014 "Cross-cutting investment and finance issues" 1212.

³⁹⁷ Gupta *et al* 2014 "Cross-cutting investment and finance issues" 1212.

³⁹⁸ IPCC 2014 <https://www.ipcc.ch/report/ar5/> 117-130.

³⁹⁹ IPCC 2014 <https://www.ipcc.ch/report/ar5/> 117-130.

⁴⁰⁰ Gupta *et al* 2014 "Cross-cutting investment and finance issues" 1212.

future climate change.⁴⁰¹ Total climate finance flowing to developing countries is the amount of the total climate finance invested in developing countries that comes from developed countries.⁴⁰² This covers private and public funds.⁴⁰³ Private climate finance flowing to co-developing⁴⁰⁴ countries is finance and investment by private actors in or from developed countries for mitigation and adaptation activities in developing countries, while public climate finance flowing to developing countries finance provided by developed countries' governments and bilateral institutions as well as by multilateral institutions for mitigation and adaptation activities in the developing countries. Most of these funds provided are concessional loans and grants.⁴⁰⁵

Climate finance led to debate amongst those in the field with varying viewpoints being pronounced. Amongst these views are that climate finance is a subset of the colloquially referred term "green finance", distinguishing itself as a mitigation and adaptation form of finance.⁴⁰⁶ At the core of climate finance is its focus on public finance whilst being able to leverage the larger capital amounts of private finance.⁴⁰⁷ Historically climate finance was used to finance riskier projects or technical assistance activities as result of limited interest from the private sector because of uncertain revenue streams.⁴⁰⁸ The exponential growth of climate finance has seen an upsurge in corporate involvement. Governments would historically as a consequence therefore

⁴⁰¹ IPCC 2014 <https://www.ipcc.ch/report/ar5/> 117-130.

⁴⁰² Gupta *et al* 2014 "Cross-cutting investment and finance issues" 1212.

⁴⁰³ IPCC 2014 <https://www.ipcc.ch/report/ar5/> 117-130.

⁴⁰⁴ Private Climate Finance can be simply defined as private finance that enables investment in climate change related activities. Private finance is a complex and diverse universe and it can come in many forms: i) it originates from a plethora of sources and origins; ii) it can possess varying legal natures; iii) it can feature different seniorities and different levels of return and expectation and risk exposure; iv) it can flow and be intermediated through private or public mediums and feature varying levels of liquidity; v) it can involve different actors, ranging from small angel investors to very large banks; vi) it can be short, medium or long term. UNEP 2014 <https://www.unepfi.org/fileadmin/documents/DemystifyingPrivateClimateFinance.pdf> 62.

⁴⁰⁵ IPCC 2014 <https://www.ipcc.ch/report/ar5/> 117-130.

⁴⁰⁶ Warren 2019 *Climate Policy* 865.

⁴⁰⁷ Warren 2019 *Climate Policy* 861.

⁴⁰⁸ Warren 2019 *Climate Policy* 865.

disburse climate finance in the form of grants or concessional loans for riskier projects.⁴⁰⁹ This has resulted in another definition of climate finance which states:

Climate finance is a sub-set of green finance and refers to investments specifically in climate change mitigation and adaptation activities, which primarily involve public finance and the leveraging of private finance.⁴¹⁰

At the Copenhagen Accord in 2009, developed countries in an unprecedented move committed to provide "new and additional" resources in the form of "Fast-start Finance" of US\$30 billion between 2010-2012.⁴¹¹ This was to include forestry investments through international institutions to the value of US\$30 billion for the same period with "balanced allocation between adaptation and mitigation".⁴¹² Additionally they agreed to a goal of mobilising jointly US\$100 billion a year by 2020 to address the needs of developing countries, "from a wide variety of sources, public and private bilateral and multilateral, including alternative sources of finance in the context of meaningful mitigation actions and transparency on implementation".⁴¹³ The Copenhagen Accord⁴¹⁴ commitment, also named the Long-term Finance commitment, was seen as the start of climate finance.⁴¹⁵ A new Green Climate Fund (GCF) was set up as the operational entity of the financial mechanism.⁴¹⁶

Affirmation of the commitments made in Copenhagen were made at COP16 in Cancun. In Durban 2011 at COP17 the decision to operationalise the GCF, part of the Durban Platform for Enhanced Action,⁴¹⁷ was taken and in Paris 2015, at COP21 the developed nations once again pledged to finance "US\$100 billion a year for the dissemination low-carbon technologies; the implementation of a reimbursement mechanism for damage from global warming to the most exposed countries, was also

⁴⁰⁹ Warren 2019 *Climate Policy* 865.

⁴¹⁰ Warren 2019 *Climate Policy* 865. Academics have generally defined "climate finance" as climatic related financial flows within or between countries that are dedicated to both mitigation and adaptation.

⁴¹¹ Markandya, Galarraga and Rübbelke *Climate Finance* 13.

⁴¹² Haites 2011 *Climate Policy* 963-969.

⁴¹³ Haites 2011 *Climate Policy* 963-969.

⁴¹⁴ UNFCCC 2010 <https://unfccc.int/resource/docs/2009/cop15/eng/11a01.pdf>.

⁴¹⁵ Romano *et al Climate Finance* 26.

⁴¹⁶ Romano *et al Climate Finance* 26.

⁴¹⁷ Romani and Stern 2011 *Grantham Institute London* 5.

planned".⁴¹⁸ An extension from the previously agreed 2020 target to 2025 was made in Paris when countries agreed collectively to set a new goal above the US\$100 billion probably acknowledging that more upscaling would be required.⁴¹⁹ This funding would come from "a wide variety of sources, public and private, bilateral and multilateral, including alternative sources of finance".⁴²⁰ This is an important aspect of climate finance seen by many as a political benchmark.⁴²¹ The *Paris Agreement* was important in terms of climate finance for several reasons, key of which was to make "finance flows consistent with a pathway towards low greenhouse emissions and climate resilient development". This is contained in Article 2.1 (c) of the UNFCCC.⁴²²

Climate finance is plagued by a lack of internationally agreed modalities on how to account for the financial flows from developed to developing countries which has provided widely contrasting statements on actual figures.⁴²³ This lack of accounting and some would say accountability between the developed and developing countries has led to a serious erosion of trust in debates of climate finance.⁴²⁴

⁴¹⁸ Romano *et al* *Climate Finance* 26.

⁴¹⁹ Weikmans and Roberts 2019 *Climate and Development* 1.

⁴²⁰ LSE 2018 <http://www.lse.ac.uk/GranthamInstitute/faqs/what-is-climate-finance-and-where-will-it-come-from/>.

⁴²¹ Bodnar, Brown and Nakhooda 2015 <https://climatepolicyinitiative.org/wp-content/uploads/2015/08/What-Counts-Tools-to-Help-Define-and-Understand-Progress-Towards-the-100-Billion-Climate-Finance-Commitment.pdf>.

⁴²² Warren 2019 *Climate Policy* 861-877. The main contestation at Copenhagen COP15, was that in the Accord, funds were to be designated part public and part private with the funding for the transformation process principally funded by the private sector. This was such a sticking point that without the phrase "public and private" there would not have been a Copenhagen Accord and subsequently no Cancun Agreement. See 3.4.

⁴²³ Weikmans and Roberts 2019 *Climate and Development* 1.

⁴²⁴ Developed nations have made claims of having delivered on "Fast Start Finance" while developing countries have disputed the amounts supposedly given. So bad was the mistrust between the groups that in 2015 shortly before the Paris negotiations, the OECD and the research and policy organisation Climate Policy Initiative (CPI) released a report that was heavily criticised and disputed by the developing nations. The accuracy of the conclusions and methods by which it had been commissioned and prepared was questioned. The South African chief negotiator at the United Nations climate talks in Bonn, said "I am not able to comment on or judge the report because we don't know the veracity, credibility and the methodology of the report or who was consulted. Developing countries were not. It has no status in the UN negotiations. It was not commissioned under the mandate of the UNFCCC".

Two principal issues arise from climate finance, admittedly they may be more, but in this research the focus will be on "additionality" (whether funds are new and additional) and "fairness", which arises in part raised by the contrasting viewpoints of the parties as to what constitutes climate finance.⁴²⁵ The use of the term "new" and "additional" affects the quantification of climate finance, the accounting issues mainly concern how the financial flows are calculated.⁴²⁶

The concept of "additionality" defines the supplementarity of an emission reduction effort, in particular, where such effort takes place outside of the countries and sectors that fall under the cap assumed by developed countries under the *Kyoto Protocol*.⁴²⁷ It is seen as supporting both mitigation and adaptation measures indicating by the donor a measure of seriousness being attributed to the scale of the problem.⁴²⁸ Climate finance has the potential to enhance both adaptation and mitigation effectiveness as well as the fairness of the global response.⁴²⁹ This is achieved through assisting the most vulnerable countries and financing the transition by developing countries to low-carbon and resilient economies.⁴³⁰ The question is asked how does one measure effectively the concept of "additionality", when negotiations have failed to establish baseline guidelines and reference scenarios?⁴³¹ How effective such efforts are measured is a false narrative in that there is no reference or regulatory requirement to do so or measure against, therefore making it impossible

The senior advisor to the Indian Ministry of Finance and climate finance negotiator is quoted having said "The most fundamental assessment should have been matched to the flows (of climate finance) provided by the developed countries should be matched to the total flows received by the developing countries". This report is silent on this. The Indian advisor was responding to the exclusion of developing nations from being part of the process in defining what should constitute as "climate finance". This intentional exclusion of more than 150 Parties from the definitional discussions is and was unacceptable and has been vehemently questioned by climate finance activists.

⁴²⁵ Bodnar, Brown and Nakhooda 2015 <https://climatepolicyinitiative.org/wp-content/uploads/2015/08/What-Counts-Tools-to-Help-Define-and-Understand-Progress-Towards-the-100-Billion-Climate-Finance-Commitment.pdf> 10.

⁴²⁶ Bodnar, Brown and Nakhooda 2015 <https://climatepolicyinitiative.org/wp-content/uploads/2015/08/What-Counts-Tools-to-Help-Define-and-Understand-Progress-Towards-the-100-Billion-Climate-Finance-Commitment.pdf> 10.

⁴²⁷ Streck 2011 *Carbon & Climate Law Review* 158-168.

⁴²⁸ Streck 2011 *Carbon & Climate Law Review* 158-168.

⁴²⁹ Pickering, Betzold and Skovgaard 2017 *Int'l Environ Agreements* 1-16.

⁴³⁰ Pickering, Betzold and Skovgaard 2017 *Int'l Environ Agreements* 1-16.

⁴³¹ Streck 2011 *Carbon & Climate Law Review* 158-168.

to prove "additionality".⁴³² Developing countries see financial flows through the concept of "additionality" as acknowledgement by developed countries that they contributed to environmental challenges as a result of their consumption patterns and industrialisation creating or resulting in climate change.⁴³³ This conditional cost of participation by developing countries is the demand they make in the fear of environmental concerns becoming the focal point without development of developing countries being the priority.⁴³⁴

Several attempts have been made to establish an indicator of new and additional resources, as the attempt by the Commission on Sustainable Development was unsuccessful.⁴³⁵ Without a transparent definition, "additionality" could lead to double counting of development aid as climate finance exacerbating the mistrust which already exists within international negotiations.⁴³⁶ The basis of the addition largely depends on the baseline upon which it is measured. Articles 4.3 and 4.7 of the UNFCCC, state that the financial resources to support climate actions should be new and additional.⁴³⁷

⁴³² Streck 2011 *Carbon & Climate Law Review* 158-168.

⁴³³ Streck 2011 *Carbon & Climate Law Review* 158-168.

⁴³⁴ Streck 2011 *Carbon & Climate Law Review* 158-168. In the 1990 London Amendment of the *Montreal Protocol*, it is expressly stated that fund contributions "shall be additional to other financial transfers to" developing countries. Existing financial flows are generally not part of the "additionality" concept which is generally seen by many commentators as official development assistance (ODA) and rather that "additionality" should be seen as supplementary finances.

⁴³⁵ Streck 2011 *Carbon & Climate Law Review* 158-168.

⁴³⁶ Markandya, Galarraga and Rübbelke *Climate Finance* 30.

⁴³⁷ Bodnar, Brown and Nakhooda 2015 <https://climatepolicyinitiative.org/wp-content/uploads/2015/08/What-Counts-Tools-to-Help-Define-and-Understand-Progress-Towards-the-100-Billion-Climate-Finance-Commitment.pdf> 10. Support of the US\$ 30 billion being new and additional as per Article 4.3 is best summarised in the list adapted from the UNFCCC Standing Committee on Finance's 2014 Biennial Assessment and Overview of Climate Finance Flows, namely

- (a) Only funds mobilised from new sources, such as levy on emissions trading;
- (b) Only funds delivered through new channels, such as the GCF;
- (c) Only funds in excess of a 0.7% of GNI contribution to ODA;
- (d) Only funds in excess of current ODA;
- (e) Only funds in excess of ODA levels from specified baseline year;
- (f) Only funds in excess of projected ODA calculated using a specific formula; (g) Only a specified share of the increase in ODA;
- (h) Only funds in excess of current climate finance;
- (i) Only climate finance that is not reported as ODA.

Pickering, Jotzo and Wood in an article refer to "fairness" as reference to "even-handed, proportionate, or non-arbitrary treatment of persons and groups in the distribution of goods or the satisfaction of more claims".⁴³⁸ Fairness and equity they argue is sometimes used interchangeably with two features in common: "a substantive dimension, relating to the fairness of the outcome of the institution or policy in question, as well as a procedural dimension relating to the fairness of the associated decision-making and implementation process".⁴³⁹ In Article 3.1 of the UNFCCC climate finance invokes the principle of "common but differentiated responsibilities and respective capabilities" for the protection of the environment.⁴⁴⁰ An equitable input should be made by those nations that caused the most harm to the environment into the financing of mitigation and adaption needs of the developing countries who caused the least harm or contributed the least to global climate change such as Annex II countries.⁴⁴¹

Substantive fairness requires that fairness should apply to the financial contributions made but also that the arrangements to do so, should not unduly shift the burden of raising funds onto recipient countries or divert other resources in the form of development assistance and contributions pledged by the recipient countries.⁴⁴² Substantive fairness is a broad term that incorporates the fair allocation of funding among and within recipient countries. "Substantive fairness" is intricately linked to "procedural fairness" and it requires that effort-sharing arrangements are transparent and accountable at a minimum.⁴⁴³ Deliberations must be truthful, authentic and engage all the involved parties in a non-coercive mutually respectful manner.⁴⁴⁴ Principles of "responsibility", "capacity" and "need" have been found to serve as the normative basis for a scheme of burden sharing that is accepted by the parties as

⁴³⁸ Pickering, Jotzo and Wood 2015 *Global Environmental Politics* 41.

⁴³⁹ Pickering, Jotzo and Wood 2015 *Global Environmental Politics* 42.

⁴⁴⁰ Pickering, Jotzo and Wood 2015 *Global Environmental Politics* 47.

⁴⁴¹ Pickering, Jotzo and Wood 2015 *Global Environmental Politics* 45.

⁴⁴² Pickering, Jotzo and Wood 2015 *Global Environmental Politics* 42.

⁴⁴³ Pickering, Jotzo and Wood 2015 *Global Environmental Politics* 42.

⁴⁴⁴ Pickering, Jotzo and Wood 2015 *Global Environmental Politics* 42.

being fair for their inclusion in global climate change negotiations.⁴⁴⁵ Theories of justice conceptualise "fairness" in four broad categories:

- Equality (people/countries should get equal shares of whatever distributed);
- Need (those who are worse-off should be paid special attention);
- Deserve (people/countries should get what they deserve); and
- Reciprocity (people/countries positive actions are rewarded and harmful actions are punished).⁴⁴⁶

An egalitarian distribution of costs and benefits is one of many ways that the perception of fairness may be perceived by the participants in a particular process. Two variants of "reciprocal fairness" are suggested, these are:

- Intention-driven fairness (dependent on beliefs of other countries)
- Consequence-driven fairness (based on the consequences of activities executed by other countries before the present negotiation takes place and therefore incorporating the reciprocity principle).⁴⁴⁷

It is therefore argued by legal scholars that climate finance because of its reciprocal nature influences the willingness (positively or negatively) of recipient countries to be part of the agreement or process.⁴⁴⁸ Support of mitigation is seen as a sign of predisposition to participate by donors whilst support for adaptation could mitigate the unfairness associated with the participation of non-responsible countries if seen in the context of reparation for damages already caused by the donor(s).⁴⁴⁹ Trust forms an important element when developed countries make their contributions to developing countries which can be easily eroded if such agreed upon contributions are not made.⁴⁵⁰ It demonstrates good faith on the part of developed countries when payments are made increasing the credibility of the UNFCCC.⁴⁵¹ An important aspect

⁴⁴⁵ Markandya, Galarraga and Rübbelke *Climate Finance* 15.

⁴⁴⁶ Markandya, Galarraga and Rübbelke *Climate Finance* 20.

⁴⁴⁷ Markandya, Galarraga and Rübbelke *Climate Finance* 21.

⁴⁴⁸ Markandya, Galarraga and Rübbelke *Climate Finance* 21.

⁴⁴⁹ Markandya, Galarraga and Rübbelke *Climate Finance* 21.

⁴⁵⁰ Markandya, Galarraga and Rübbelke *Climate Finance* 21.

⁴⁵¹ Markandya, Galarraga and Rübbelke *Climate Finance* 21.

often underestimated, is that capacity building needs to precede the support for specific actions.⁴⁵² Many of the developing nations do not have the sophistication of the international financial markets often required to leverage international finance.⁴⁵³ A credible system of transfer not only acts a "carrot" but also as a "stick" or means of encouragement for non-compliance for international agreements to be successful.⁴⁵⁴ This means of sanctioning a state can create credibility because it effectively enforces the rules of engagement, enhancing the fairness perception when the systems is fairly designed for all participants.⁴⁵⁵

Climate finance provides for the mobilisation of finance to further climate action through the flow of capital between countries for proactive investing into low carbon aligned projects that provide for mitigation and adaption. Climate finance should be viewed as a response to climate vulnerability and green bonds, similarly, are a specific mechanism within climate finance set to achieve the same goal. Green bonds act as drivers of the global mitigation and adaptation strategies and because they provide a cheaper financing mechanism than loans, are better suited to long term investments required to drive the transition to a low carbon future. Institutional investors are able to diversify their portfolios from exposure to brown investments by buying green investments and using green bonds as a tool to implement the *Paris Agreement*.

Stated above, green bonds should also strive towards the achievement of sustainable development, sustainable energy and ESG.

⁴⁵² Markandya, Galarraga and Rübbelke *Climate Finance* 21.

⁴⁵³ Markandya, Galarraga and Rübbelke *Climate Finance* 21.

⁴⁵⁴ Markandya, Galarraga and Rübbelke *Climate Finance* 21.

⁴⁵⁵ Markandya, Galarraga and Rübbelke *Climate Finance* 21.

2.5.5 Sustainable development, sustainable energy and environmental social governance

In this paragraph the concepts of sustainable development⁴⁵⁶ and sustainable energy will be discussed.⁴⁵⁷ Sustainable development is generally seen as a process or evolution towards achieving certain specific goals, such as sustainability.⁴⁵⁸ It is not a new concept as noted by Weeramantry J, when he stated in the *Gabčíkovo-Nagymaros Project* case between Hungary and Slovakia that:

[T]he concept of reconciling the needs of development with the protection of the environment is ... not new. Millennia ago these concerns were noted and their twin demands well reconciled in a manner so meaningful as to carry a message to our age.⁴⁵⁹

⁴⁵⁶ Sustainable development can be regarded as the pathway to sustainability. Sustainable development and sustainability are sometimes used as synonyms. According to Kotzé 2006 *PELJ* 2 "sustainability" is "the ability to maintain a desired condition over time without eroding natural, social and financial resource bases, through a process of continual improvement in the form of sustainable development. Sustainability also relates to the integration of various considerations, including: the environment, the economy, social factors, environmental governance and management efforts, and public and industry involvement. Sustainability results must be achieved through application and implementation of the various principles of sustainability." A lot has been written on the interpretation of sustainable development and sustainability, and as it is not the focus of this study, the concept will not be dealt with in detail. For recent discussions on sustainable development and sustainability, see for Ramutsindela and Mickler (eds) *Africa and the Sustainable Development Goals*; Humphreys *Sustainable development in the European Union*; Spellergerg *What is sustainability?*; Brinkmann *Environmental sustainability*; Swilling *The age of sustainability*.

⁴⁵⁷ In the 1970s in the *Stockholm Declaration*, a link was made between social and economic development (but seemed to have excluded the environment) which appeared in Article 8 of the *Stockholm Declaration* "[e]conomic and social development are essential for ensuring a favourable living and working environment for man and for creating conditions on earth that is necessary for the improvement of the quality of life". This can be seen as a "considerable endorsement" of the concept of sustainable development by the international community. In the words of Judge Weeramantry the principle of sustainable development "is a part of modern international law by reason not only of its inescapable logical necessity, but also by reason of its wide and general acceptance by the global community". The World Commission on Environment and Development (WCED) made the inter-connectedness between economic, social and environmental development in the publication of "Our Common Future". Law and policy were gradually to be overhauled in a transformative manner and to be based on sustainable development principles. This sustainable development was explained as "A process of change in which the exploration of resources, the direction of investments, the orientation of technological development and institutional changes are all in harmony and enhance both current and future potential to meet human needs and aspirations". The Brundtland's Commission defined sustainable development as "development that meets the needs of the present without compromising the ability of the future generations to meet their own needs".

⁴⁵⁸ Glavič and Lukman 2007 *Journal of Cleaner Production* 1875-1885.

⁴⁵⁹ Sands 1999 *Max Planck UNYB* 390.

According to Sands, three aspects of the outcome of the Court's ruling are to be noted, the first was that sustainable development invoked a legal function.⁴⁶⁰ The second was that "sustainable development" was a concept and not a principle or rule.⁴⁶¹ The third and final was that it had both a procedural or temporal aspect (obliging the parties to "look afresh" at the environmental consequences of the operation of the plant) and a substantive aspect (the obligation of result to ensure that a "satisfactory volume of water" be released from the by-pass canal into the main River and its original arms).⁴⁶²

Criticism of the concept in part is as a result of the concept being too vague and open-ended attempting to align often opposing viewpoints in conflict with certain value systems that harm the environment ultimately.⁴⁶³ Sustainable development is summarised by Porras concisely and with its numerous and often complex contexts as:

Sustainable development is a concept that is multipolar, multidimensional and multiscalar in character. It is multipolar in that it requires attention to the competing values of economic development, environmental protection and equity ...; it is multidimensional in that it speaks of the necessity of continued economic growth to meet the needs of the poor, of natural limits and constraints on growth set by natural ecosystems, while reminding of the normative demand for equity within the present generation ... and over time between generations; and it is multi-scalar in that it refers to a geographical indeterminate space.⁴⁶⁴

Sustainable development law in reconciling the various aspects of developmental law has some persuasive force whilst showing normative character in international law.⁴⁶⁵ This is because for those countries that are bound by sustainable development law (which is a growing number) legal obligations or rights are created as a result of the different facets of the social, economic and environmental principles.⁴⁶⁶ In conflict situations the principles of sustainable development law may provide some relief

⁴⁶⁰ Sands 1999 *Max Planck UNYB* 393.

⁴⁶¹ Sands 1999 *Max Planck UNYB* 393.

⁴⁶² Sands 1999 *Max Planck UNYB* 393.

⁴⁶³ Du Plessis and Nel "An introduction" 7.

⁴⁶⁴ Du Plessis and Nel "An introduction" 7.

⁴⁶⁵ Barnard 2012 *PELJ* 211.

⁴⁶⁶ Barnard 2012 *PELJ* 211.

whilst supporting the integration of law and policy at the nexus of international environmental law, social and economic law.⁴⁶⁷

Whilst sustainable development may be perceived as bland, vague and incoherent by some authors, as even lacking theoretical framework for implementation and evaluation, it is in the aim of the concept that perhaps one should view it.⁴⁶⁸ A much more positive focus on attractive goals such as "abundance" or "thriveability" does not offer tangible alternatives to sustainability.⁴⁶⁹ They only seem more appealing without providing the necessary solutions and perhaps after four decades there is a lack of novelty.⁴⁷⁰ The Brundtland Report⁴⁷¹ provided a much broader perspective and saw it "as changing the quality of growth, meeting essential needs, merging environment and economics in decision making".⁴⁷² Sustainable development's profound recognition across various disciplines is nestled in five interconnected equity principles deduced from the *Stockholm Declaration*⁴⁷³ and the *Rio Declaration*,⁴⁷⁴ these are:

- Inter-generational equity (futuraity);
- Intra-generational equity (social justice);
- Geographical equity (trans-frontier responsibility);
- Procedural equity (fair treatment of people and creating access to basic needs);
- and
- Inter-species equity (the importance of biodiversity).⁴⁷⁵

⁴⁶⁷ Barnard 2012 *PELJ* 211; Cordonier Segger and Khalfan *Sustainable Development Law* 1.

⁴⁶⁸ Owosuyi 2015 *PELJ* 2012-2059.

⁴⁶⁹ Dernbach and Cheever 2015 *JTEL* 247.

⁴⁷⁰ Dernbach and Cheever 2015 *JTEL* 247.

⁴⁷¹ Brundtland "Our Common Future".

⁴⁷² Owosuyi 2015 *PELJ* 2012-2059.

⁴⁷³ *Stockholm Declaration of the United Nations Conference on Human Environment*, 16 June 1972, UN Doc. A/CONF.48/14/Rev.1, 11 I.L.M. 1461 (1972).

⁴⁷⁴ *Rio Declaration on Environment and Development*, Report of the United Nations Conference on Environment and Development, UN Doc. A/CONF.151/6/Rev.1, (1992) 31 I.L.M. 874.

⁴⁷⁵ See also Owosuyi 2015 *PELJ* 2012-2059.

These five equity principles are strongly interconnected and their integration substantively underlie the principle of sustainable development.⁴⁷⁶

Human economic evolution must therefore be responsive to economic activity that has due consideration for environmental and natural processes.⁴⁷⁷ Politics is inherently part of this development as humans generally exist within a political system.⁴⁷⁸ An integrated approach in the use of natural resources can be perceived as part of the long term view of sustainability, benefitting a variety of sectors and being intergenerational in objectives, in other words, the benefit should transcend to the future.⁴⁷⁹ The general acceptance of sustainable development globally as a broad policy objective or aspirational goal has not resulted in a unified approach, there is still divergence as to its meaning and application.⁴⁸⁰ Sustainable development's long-term goal is rooted in the relationship between the economy and the environment.⁴⁸¹ The process in decision making must acknowledge the interconnectedness of economic, environmental and social concerns.⁴⁸² Each cannot exist in isolation, but the sum of all the parts must be viewed as forming a sustainable future cognisant of future generational needs.⁴⁸³

"Legal elements" of sustainable development have been identified as reflected in international agreements to be elements that incorporate and integrate preservation of the environment.⁴⁸⁴ These "elements" consist of the integration of environmental protection and economic development (the principle of integration); sustainable utilisation of natural resources (the principle of sustainable use); the pursuance of equity in the use of and allocation of natural resources (the principle of intra-

⁴⁷⁶ Owosuyi 2015 *PELJ* 2012-2059.

⁴⁷⁷ Glavič and Lukman 2007 *Journal of Cleaner Production* 1875-1885.

⁴⁷⁸ Glavič and Lukman 2007 *Journal of Cleaner Production* 1875-1885.

⁴⁷⁹ Ağırman and Osman 2019 *EJRSE* 247.

⁴⁸⁰ Feris 2010 *PELJ* 80.

⁴⁸¹ Ağırman and Osman 2019 *EJRSE* 247.

⁴⁸² Ağırman and Osman 2019 *EJRSE* 247.

⁴⁸³ Ağırman and Osman 2019 *EJRSE* 248.

⁴⁸⁴ Feris 2010 *PELJ* 80.

generational equity); and the need to preserve natural resources for the benefit of present and future generations (the principle of inter-generational equity).⁴⁸⁵

Sustainable development gave rise to the concept sustainable energy. Sustainable energy is an economic driver of development, and is "vital for alleviating poverty, improving human welfare and raising living standards".⁴⁸⁶ It is critical that in the provision of energy, it should be affordable, secure and should not harm the environment and meet the social and development objectives of the local people.⁴⁸⁷ Using the definition of sustainability in the Brundtland Report⁴⁸⁸ in the context of sustainable energy, there needs to be harmony between energy demands and the sustainable use of the environment for developing countries to meet their developmental goals.⁴⁸⁹ The overall goal of sustainable energy in the modern world, would be to create a nexus between energy demands and those of the environment by integrating social needs, economic needs and the growth of the economy. The

⁴⁸⁵ Feris 2010 *PELJ* 89. Sustainable development is strongly embedded in South African law. The *Constitution of the Republic of South Africa*, 1996 (Constitution), for example, places a positive duty on the State to ensure sustainable development through s 24(b) by (i) protecting the environment for the benefit of present and future generations; and (ii) in doing so, taking measures that "secure ecologically sustainable development". The *Fuel Retailers Association of Southern Africa v Director-General: Environmental Management, Department of Agriculture, Conservation and Environment, Mpumalanga Province* 2007 6 SA 4 (CC) (7 June 2007) case highlighted the concept of sustainable development by stating that the lack of the integration of (the elements) social, economic and environmental aspects or considerations in the decision-making process amounted to a failure to adhere to the dictates of the Constitution. These elements can be viewed as "means to achieve the end" and "would include sustainable utilisation of natural resources, the pursuit of equity in the use and allocation of natural resources, and the integration of environmental protection and economic development". The environmental right is firmly grounded in sustainable development in its explicit attempt to cohesively integrate developmental issues with sustainability. The State must therefore "make decisions" that ensure the protection of the environment not only in the immediate term but also in the long term and such decisions should ensure that they are cognisant of the principle of sustainable development. See para 4.2.5.

⁴⁸⁶ UN-Energy 2014
<https://sustainabledevelopment.un.org/index.php?page=view&type=400&nr=1262&menu=15151>.

⁴⁸⁷ UN-Energy 2014
<https://sustainabledevelopment.un.org/index.php?page=view&type=400&nr=1262&menu=15151>.

⁴⁸⁸ Also see Emas 2015 *Brief for GSDR* 1.

⁴⁸⁹ UN-Energy 2014
<https://sustainabledevelopment.un.org/index.php?page=view&type=400&nr=1262&menu=15151>.

paradigm shift towards GHG mitigation relies on the type of energy sources countries will need to build sustainable economies of the future.⁴⁹⁰

The inter-linkages which exist between sustainable development and sustainable energy provide broad synergies and more holistic approaches to GHG mitigation.⁴⁹¹

Sustainable energy is derived from attempts by scholars to implement the principles of sustainable development.⁴⁹² There is an inextricable link between climate finance and sustainable energy as economic growth is dependent to a large degree on access to reliable energy to achieve sustainable development. Russel states the following with regard to sustainable energy:

Sustainable energy is at the center of any discussion of 'sustainable development' – both from the economic perspective and from the larger perspective of society's interest in continued survival. Energy is crucial to all aspects of the economy, and

⁴⁹⁰ UN-Energy 2014
<https://sustainabledevelopment.un.org/index.php?page=view&type=400&nr=1262&menu=151511>.

⁴⁹¹ In UN-Energy 2014
<https://sustainabledevelopment.un.org/index.php?page=view&type=400&nr=1262&menu=151519> provides the following indicators:

Energy and Health

- securing sustainable energy for all healthcare facilities of the world;
- eliminating all premature deaths due to air pollution from cooking and heating;

Energy and Education

- securing sustainable energy for all schools of the world;

Energy and Gender

- minimizing all risks that affect women due to energy related activities including collection of energy resources, cooking, heating, lighting, etc;

Energy and Water

- minimizing the use of water in energy systems (in all steps of the production cycle);
- maximizing sustainable energy access in all water and sanitation systems;

Energy and Food Security

- reducing the intensity of fossil fuel use in food systems and increasing access to modern energy services while meeting individual and national food requirements;

Energy and Environment

- minimizing all of the discharge of contaminants from energy systems to land, atmosphere and water bodies;
- minimizing the rate of deforestation attributed to energy use;
- minimizing GHG emissions from energy systems;

Energy and Industrialisation

- reducing industrial energy intensity;
- increasing the share of renewable energy use in manufacturing processes;
- increasing the share of renewable energy in manufacturing processes;
- providing access to reliable energy services to support structural change and industrialization.

⁴⁹² Prandecki 2014 *Energy and Environmental Engineering* 83.

energy production and use are central to the issue of global climate change. Reliable energy has always been the backbone of the economic activity. In addition to powering the world economy, energy and control of energy resources influence government.⁴⁹³

The transition to sustainable energy requires the move towards renewable energy and the production of sustainable energy through innovative financial mechanisms such as green bonds which sets parameters on the type of energy to be financed. This linkage requires that capital investments ought to be aligned with the objectives of sustainability and therefore the proposition is that the financial instruments must also be such that they are sustainable in their financing and the projects financed should meet sustainable objectives (for example, inter-generational equity; intra-generational equity; geographical equity and procedural equity).⁴⁹⁴

In recent research a strong relationship emerged between sustainability and sustainable finance as well as sustainable energy, further expanding the elements.⁴⁹⁵ Sustainability cannot be gained without green finance, sustainable development is inter-connected because with green finance.⁴⁹⁶ The reasons are that:

- Without assuring sustainability in financial system overall sustainability cannot be achieved;
- The objective of meeting the needs of present generation without compromising the future cannot be attained without the assurance of green finance in the economy; and
- Without sustainable development green finance is incomplete as green finance itself is meant to ensuring sustainability.⁴⁹⁷

⁴⁹³ Russell 2008 *Tulsa LR* 121.

⁴⁹⁴ See also Owosuyi 2015 *PELJ* 2012-2059.

⁴⁹⁵ Sustainable finance is a work stream to support the European Green Deal channeling private investment to the transition to a climate. UN 2020 https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance/what-sustainable-finance_en. The European Green Deal is a roadmap for making the EU's economy sustainable. This will happen by turning climate change and environmental challenges into opportunities across all policy areas and making the transition just and inclusive for all.

⁴⁹⁶ Ağırman and Osman 2019 *EJRSE* 248.

⁴⁹⁷ Ağırman and Osman 2019 *EJRSE* 248.

Green bonds form an integral part of climate finance and align with the transition required by Article 2 of the *Paris Agreement* in "meeting the financial flows which are consistent with a pathway towards low greenhouse gas emissions and climate-resilient development".⁴⁹⁸ The upscaling of initiatives in green finance have been noted and reported on by the United Nations Environment Programme (UNEP)⁴⁹⁹ and linked to ESG.

Sustainable energy for purposes of this thesis, is therefore the introduction of renewable, low carbon energy technology financed by capital which meets the Green Bond Standards and does not harm the environment in the long term by keeping to ESG principles.

2.5.6 Environmental Social Governance (ESG)

2.5.6.1 Adoption of ESG

In the 1990s ESG came to the fore as a result of equity markets influenced by investors with religious, values-based or thematic aligned issues.⁵⁰⁰ The adoption of socially responsible investment at the time "involved and included a particular investment selection, retention and rejection process based on conventional financial decision criteria along with moral and ESG considerations".⁵⁰¹

The societal shift from purely profit driven investment decisions is and has made impacts on the stock exchanges across the globe.⁵⁰² The investor has an interest

⁴⁹⁸ Article 2 of UNFCCC.

⁴⁹⁹ Ağırman and Osman 2019 *EJRSE* 248. Some developing countries like Kenya, are some of the frontrunners in matching financial market development with national priorities in green projects and sustainable development.

⁵⁰⁰ Inderst and Stewart 2018 *World Bank Group Publication* 1. ESG may have its origins in the Quakers, a missionary Christian group who snubbed the investment in slavery, tobacco and alcohol. In the 1960s there were several movements or groups opposed to the Vietnam war, which promoted women's rights, civil rights, largely as a way of promoting socially responsible investments actively seeking the disinvestment in any activities that affected the aforementioned. Evangelical Protestants founded the pioneer fund in 1928 that had strong socially responsible influences.

⁵⁰¹ Syed 2017 *Cogent Business & Management* 2.

⁵⁰² Talan and Sharma 2019 *Sustainability* 2. ESG has historically been placed within sustainable investing with researchers in this area shifting from theoretical articles with emphasis on "sacrifice", "morality" and "religion" to empirical articles now more focused on "performance", "stakeholders" "financial performance", "activism" and "sustainability".

whether the modern company acts in a socially and environmentally ethical way, influencing investor decision making.⁵⁰³ ESG is viewed by many as the non-financial performance of a stock, which includes negative screening, positive screening and best-in class engagement with the board and activism by the shareholder.⁵⁰⁴ ESG data is multifaceted and context dependent.⁵⁰⁵ This contextual view of the company is based on the company being a contributor "towards sustainable development by means of corporate strategies that integrate sustainable practices into the corporate strategy by achieving corporate sustainability".⁵⁰⁶ ESG has become a critical element of the decision making process and competitive strategy adopted by investment firms. However, because of the variance in how the information is used, the contextual nature of the use of the data varies across geographical regions and affects how ESG data is used.⁵⁰⁷ This need not be an issue, but an acceptance of differences in the data as a result of geographical and cultural biases. There is no definitive list of ESG issues.⁵⁰⁸ ESG is often unstructured, qualitative, scattered and incomplete to a large result because of minimal research.⁵⁰⁹ This affects effective ESG implementation and hampers the growth of a theoretical foundation.⁵¹⁰ ESG is regarded as "extra financial" and this adds costs could that reduce the return on investment.⁵¹¹

ESG nevertheless forms a critical component of responsible investing. The United Nations aligned Principles for Responsible Investment (PRI) defines responsible investing as "a strategy and practice that incorporates environmental, social and governance (ESG) factors in investment decisions and active ownership".⁵¹² The PRI, as a voluntary code of conduct, provides for process and substantive performance standards.⁵¹³ The signatories to the PRI, who are primarily institutional investors like

⁵⁰³ Du Toit and Lekoloane 2018 *SAJEMS* 1-11.

⁵⁰⁴ Van Duuren, Plantinga and Scholtens 2016 *JBE* 525.

⁵⁰⁵ In, Rook and Monk 2019 *GER* 237-260.

⁵⁰⁶ Escrig-Olmedo *et al* 2019 *Sustainability* 13-16.

⁵⁰⁷ In, Rook and Monk 2019 *GER* 237-260.

⁵⁰⁸ Inderst and Stewart 2018 *World Bank Group Publication*.

⁵⁰⁹ In, Rook and Monk 2019 *GER* 237-260.

⁵¹⁰ In, Rook and Monk 2019 *GER* 237-260.

⁵¹¹ In, Rook and Monk 2019 *GER* 237-260.

⁵¹² PRI 2018 <https://www.unpri.org/investor-tools/what-is-esg-integration/3052.article>.

⁵¹³ Richardson 2009 *Int'l & Comp LQ* 597.

the Government Employees Pension Fund in South Africa (GEPF is a founding member of the PRI), bind themselves to a duty to act in the best long-term interests of their beneficiaries and acknowledge that ESG issues can positively or negatively affect their investment portfolios.⁵¹⁴ With over 900 signatories and US\$30 trillion in investment funds, the PRI is becoming the *de facto* standard in the industry.⁵¹⁵

Without any real consensus on the definition of responsible investing, Blanchard and Monjon define responsible investing as "an investment discipline that considers ESG criteria to generate long term-term competitive financial returns and [a] positive societal impact".⁵¹⁶

Eurosif states that asset managers should include ESG risks and opportunities in their investment decisions.⁵¹⁷ Successful implementation of ESG is ultimately a function of whether ESG as a tool and its integration can be used in business, finance and investment performance.⁵¹⁸ Research has found that the lack of ESG integration is often as a result of misunderstanding the intricate link between the organisations environmental and financial performance.⁵¹⁹ There is a direct correlation. Some research seems to suggest that the misalignment or non-use of ESG data into investment decision making is a result of readily available verifiable data on the topic and its long-term use.⁵²⁰ New tools of data collection and analytics are not actively nor effectively used by the investing parties. Some investors seem to under invest incorporating ESG tools that can provide comprehensive understanding of the analytical capabilities, data-related infrastructure, governance structure, asset allocation, and investment time horizons required for fully implementing investment

⁵¹⁴ Viviers and Els 2017 *African Rev of Eco and Fin* 122-155.

⁵¹⁵ Galbreath 2013 *JBE* 529-541.

⁵¹⁶ Viviers and Els 2017 *African Rev of Eco and Fin* 122-155.

⁵¹⁷ Van Duuren, Plantinga and Scholtens 2016 *JBE* 525 "The activities of the asset manager are categorised by Eurosif as Category 1: ('non-systematic ESG Integration'): ESG research and analyses made available to mainstream analysts and fund managers; Category 2: Systematic consideration/inclusion of ESG research/analyses in financial ratings/valuations by analysts and fund managers; Category 3: Mandatory investment constraints based on financial ratings/valuations derived from ESG research/analyses (exclusions, under-weighting, and etc.). Categories 2 and 3 are considered by Eurosif to be consistent with ESG integration".

⁵¹⁸ In, Rook and Monk 2019 *GER* 237-260.

⁵¹⁹ In, Rook and Monk 2019 *GER* 237-260.

⁵²⁰ In, Rook and Monk 2019 *GER* 237-260.

decisions.⁵²¹ Investors need to be able to fully comprehend the value of ESG datasets.⁵²² This apprehensiveness is often linked to costs implications of installing and setting up ESG analytical tools to the long term detriment of the business. High quality ESG data can map and inform investment decision-making processes.⁵²³ Society and the investment community can benefit from ESG information as a result of financial markets societal initiatives and activities.⁵²⁴ ESG can track such change in societal shifts.

In some institutions ESG serves as a key indicator of management competence, risk management assessment and non-adherence can lead to non-financial performance.⁵²⁵ ESG factors are constantly shifting with the economic challenges of the time, for example:

- Environmental factors
 - Climate change;
 - GHG emissions;
 - Resource depletion (including water); and
 - Waste and pollution.
- Social Governance
 - Working conditions (including slavery and child labour);
 - Local communities (including indigenous communities);
 - Health and safety; and
 - Employee relations and diversity.
- Governance
 - Bribery and corruption;
 - Board diversity and structure; and
 - Tax strategy.⁵²⁶

⁵²¹ In, Rook and Monk 2019 *GER* 237-260.

⁵²² In, Rook and Monk 2019 *GER* 237-260.

⁵²³ In, Rook and Monk 2019 *GER* 237-260.

⁵²⁴ Van Duuren, Plantinga and Scholtens 2016 *JBE* 525-533.

⁵²⁵ Galbreath 2013 *JBE* 529-541.

⁵²⁶ PRI 2018 <https://www.unpri.org/investor-tools/what-is-esg-integration/3052.article>.

In a green bond context these principles would relate to extra due diligence being undertaken during investment decisions. The demand for green bonds has resulted in financial institutions aligning their findings with projects that meet the climate agenda of the *Paris Agreement* as well as those of the ethical investor interested in green bonds.⁵²⁷

The short-termism of the financial markets and its quarterly cycles created a culture of investors constantly concerned about the quick returns on company performance and investment returns instead of the long term implications of the investment impacts.⁵²⁸ The increase in legal requirements by financial regulatory bodies globally has required the protection of the long-term interest of beneficiaries and the wider financial system.⁵²⁹ The growth of responsible investing has also been to a large extent driven by competition within the sector as a result of differentiation between competitors offering responsible services.⁵³⁰ The investor has globally become increasingly active demanding more transparency about where the money gets invested and in what, leading to institutional organisations being more conscious of investments.⁵³¹ Reputational risk, is a key driver of responsible investing with global companies (well aware of its value harming effects to the share price) being more risk averse to this phenomenon because of issues such as globalisation, social media, climate change, pollution, working conditions aggressive tax strategies and employee diversity.⁵³²

⁵²⁷ Tolliver, Keeley and Managi 2019 *Environ Res Lett* 9.

⁵²⁸ PRI 2018 <https://www.unpri.org/investor-tools/what-is-esg-integration/3052.article>. Assimilation of ESG criteria by investors in making long-term investments requires the involvement of long-term uncertainties which could lead to unwanted consequences and the mitigation of such risk. Some may view the integration of ESG into the market valuation as a cost thereby deterring some investors whilst the more prudent investor may view ESG as a protection mechanism from unseen externalities that may negatively affect the investment. Some research has shown that some mutual funds charge higher expense ratios, and this was statistically significant. However, contextualised in light of the 2008 stock market crash this added expense could very well be the cost of why ESG factored stocks constantly provide superior returns.

⁵²⁹ PRI 2018 <https://www.unpri.org/investor-tools/what-is-esg-integration/3052.article>.

⁵³⁰ PRI 2018 <https://www.unpri.org/investor-tools/what-is-esg-integration/3052.article>.

⁵³¹ PRI 2018 <https://www.unpri.org/investor-tools/what-is-esg-integration/3052.article>.

⁵³² PRI 2018 <https://www.unpri.org/investor-tools/what-is-esg-integration/3052.article>.

There seems to be variance in the literature on the effectiveness of ESG strategies. In some geographical locations the environmental aspect is seemingly more important and plays a critical role in the financial performance of an organisation, whilst in some areas it does not. Governance as a pillar of ESG was transparent in some jurisdictions while it was not so in others, with significant variations in social policies affecting the disclosure of policies. Investments by their very nature tend to be long term, that is not to say short term investments do not exist or are not part of investment decision making, long-term investing creates a tension between business and society.⁵³³ This tension requires that the investment is transparent.⁵³⁴ Transparency provides for the availability of information allaying any fears which may exist between the parties.⁵³⁵ This information on the investment opportunity very often informs other long-term investments and creates trust between business and the community in which it operates.⁵³⁶

The modern company exists to make a profit for its shareholders. This maximisation of shareholder wealth is, however, not the only role the company exists for, it has relationships that are part of this shareholder maximisation.⁵³⁷ There is a community of interests with conjoint benefits being accrued to the various stakeholders with mutual financial rewards in the long run.⁵³⁸ ESG provides other information beyond the accounting perspective which is often seen as additional data to the financial

⁵³³ De Carvalho Ferreira *et al* 2016 *JSFI* 117.

⁵³⁴ De Carvalho Ferreira *et al* 2016 *JSFI* 117.

⁵³⁵ De Carvalho Ferreira *et al* 2016 *JSFI* 117. Equity portfolios that have historically scored higher on eco-efficiency (the economic value added relative to the waste produced) scored significantly higher on their risk-adjusted returns than portfolios that did not. Recent trends have seen some countries advocating for the regulation of ESG with France, Netherlands and Chile are at the forefront of this development. This makes ESG disclosure mandatory in countries like Germany, France, United Kingdom, Sweden and Australia with a broader interpretation being encouraged. France introduced Article 173 in 2015, this law on "Energy Transition for Green Growth" makes it mandatory for climate change reporting by financial institutions. Financial markets and investors alike widely accept that ESG factors constitute material credit risk and the incorporation of ESG factors in the investment process does not mean sacrificing financial returns. This is evidenced by the incorporation of ESG in mainstream investing by pension funds, insurance companies and asset owners. Passive and active strategies in the use of ESG is growing with development of indices that specifically track ESG criteria investments.

⁵³⁶ De Carvalho Ferreira *et al* 2016 *JSFI* 117.

⁵³⁷ Li *et al* 2018 *The British Accounting Review* 60-75.

⁵³⁸ Li *et al* 2018 *The British Accounting Review* 60-75.

data.⁵³⁹ The recent financial crisis has created a greater demand for non-financial information primarily as result of shareholder activism.⁵⁴⁰ ESG forms part of this non-financial disclosure.⁵⁴¹ Research has shown that additional and more diversified information improves price informativeness.⁵⁴²

2.5.6.2 ESG and green bonds

Taking learning points from the drivers of green bonds, green bonds principles should in principle therefore:

- Mobilise the debt market to raise capital to fund eligible projects that are low carbon and sustainable as defined under the green labelling;
- Mobilise capital for renewable energy projects and clearly communicate to investors on the allocation of proceeds by means of reporting on an annual basis how their investments meet the GBP; transparency is critical to the process;
- Mobilise capital for mitigation and adaptation projects that are green; and
- Provide a framework for the administration of funds raised to finance green projects as defined by the GBP.

The GBP are "voluntary process guidelines that recommend transparency and disclosure and integrity in the development of the Green Bond market by clarifying the approach for issuance of a Green Bond".⁵⁴³ According to ICMA the GBP environmental sustainability objectives of the project are communicated through the "Process for Evaluation and Selection" and this is how the issuer determines how the project fits within the eligible "Green Projects categories" and "related categories".⁵⁴⁴

Auditors and third party verification are key components or actors in the verification of "The Management of Proceeds" in an environment without consequence for non-

⁵³⁹ Li *et al* 2018 *The British Accounting Review* 60-75.

⁵⁴⁰ Li *et al* 2018 *The British Accounting Review* 60-75.

⁵⁴¹ Li *et al* 2018 *The British Accounting Review* 60-75.

⁵⁴² Li *et al* 2018 *The British Accounting Review* 60-75.

⁵⁴³ ICMA 2018 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/Green-Bonds-Principles-June-2018-270520.pdf>. See para 2.4 above.

⁵⁴⁴ Faske 2018 *Tulane ELJ* 293.

compliance.⁵⁴⁵ This third party verification and tracking of funds is done at the expense of the issuer adding a significant cost to the issuer especially since this added step could be mitigated by stringent standards and oversight.⁵⁴⁶ It may allow for preferred verifiers that may be more concerned about consultation fees than environmental impacts of projects that do not meet the set criteria. The difference in verifiers or certifiers could be in the rigour of their assessments and risk averse investors should align with issuers that have a track record in environmental performance.⁵⁴⁷

Whilst it may only be a suggestion, it is not mandatory for an issuer to report on an annual basis the status of green financed projects.⁵⁴⁸ This reporting is to be done with an external review, verification, certification, or rating process.⁵⁴⁹ Qualitative performance indicators and environmentally sustainability impact reports should be made available in so far as they do not compromise the duty to keep information confidential. Generic terms can be used to provide information to investors so as to meet the requirement of reporting on an annual basis.⁵⁵⁰

The European Commission is in the process of issuing a draft EU Green Bond Standard (GBS) which has the objective of providing a framework of core components for EU green bonds, enhancing transparency, integrity, consistency and comparability of EU Green Bonds thus increasing the flow of funds to green and sustainable projects.⁵⁵¹ The draft definition which is extremely detailed and very long states that:

An EU Green Bond is any type of listed or unlisted bond or capital market debt instrument issued by a European or international issuer that is aligned with the EU GBS, and therefore meeting the following requirements:

- a) The issuer's Green Bond Framework shall confirm the alignment of the EU Green bond with the EU GBS; and

⁵⁴⁵ Faske 2018 *Tulane ELJ* 293.

⁵⁴⁶ Faske 2018 *Tulane ELJ* 293.

⁵⁴⁷ Breen and Campbell 2017 *NRE* 20.

⁵⁴⁸ Faske 2018 *Tulane ELJ* 293.

⁵⁴⁹ Faske 2018 *Tulane ELJ* 293.

⁵⁵⁰ Talbot 2017 *Villanova ELJ* 139.

⁵⁵¹ EU

https://ec.europa.eu/info/sites/info/files/business_economy_euro/banking_and_finance/documents/190618-sustainable-finance-teg-report-green-bond-standard_en.pdf.

- b) The proceeds, or an amount equal to such proceeds, shall be exclusively used to finance or re-finance in part or in full new and/or existing Green Projects as defined in section 4.1, as it shall be described in the bond documentation, and
- c) The alignment of the bond with the EU GBS shall have been verified by an accredited External Reviewer in accordance with section 4.4. An issuer may only use the term 'EU Green Bond' if the above criteria are met.⁵⁵²

European and international issuers may decide to voluntarily prequalify their existing green bonds as EU Green Bonds in the same manner and, for the avoidance of doubt, after verification by an accredited External Reviewer.⁵⁵³ It is important to note that EU Green Bonds are only fungible with green bonds issued as EU Green Bonds or prequalified as EU Green Bonds.⁵⁵⁴

The GBP are not without their challenges, certain vague terms and inconsistencies plague the integrity of green bond growth. There is over reliance on the issuer being able to self-label a bond green and the issuer is not legally bound to these principles.⁵⁵⁵ It is after all a voluntary process. The opportunity for South Africa would be in government regulation to minimise greenwashing and potentially higher transaction costs and giving confidence to the market.

Shareholder activism in the form of twenty-five of some of the largest global institutional investors signed a Statement of Investor Expectations for the Green Bond Market.⁵⁵⁶ The statement advances certain expectations and concerns such as investors willingness to exercise additional diligence when evaluating bonds that finance environmentally marginal projects.⁵⁵⁷ Signatories committed to exercising due diligence by insisting on the annual impacting reporting, demanding the need for independent assurance or auditing on the selection process of the specified green

⁵⁵² EU 2019 https://ec.europa.eu/info/publications/sustainable-finance-technical-expert-group_en 3. The final EU Green Bond Standard has not changed the definition of the Draft Report – see EU 2019 https://ec.europa.eu/info/sites/info/files/business_economy_euro/banking_and_finance/documents/190618-sustainable-finance-teg-report-green-bond-standard_en.pdf 8.

⁵⁵³ EU 2019 https://ec.europa.eu/info/publications/sustainable-finance-technical-expert-group_en 3.

⁵⁵⁴ EU 2019 https://ec.europa.eu/info/publications/sustainable-finance-technical-expert-group_en 3.

⁵⁵⁵ Banahan 2019 *Vermont LR* 859.

⁵⁵⁶ Markandya, Galarraga and Rübbelke *Climate Finance* 88.

⁵⁵⁷ Markandya, Galarraga and Rübbelke *Climate Finance* 88.

projects.⁵⁵⁸ These investors representing over US\$ 11 trillion signed the Paris Green Bonds Statement and committed to grow the market.⁵⁵⁹

Issuers of green bonds are encouraged by the GBP to be transparent in how they determine which projects receive green bond proceeds. This is open to manipulation, as a further requirement is that a separate sub-account is opened for the tracking of the use of proceeds, to be done "in an appropriate manner and attested to by a formal internal process".⁵⁶⁰ Being a voluntary process the GBP further recommend that impact reporting be done to update investors.⁵⁶¹ Quantifiable values at the bonds issuance can be attached to the green projects to be funded by the "use of proceeds".⁵⁶² This promotes transparency and accountability on behalf of the issuer.⁵⁶³

Whilst there may be many similarities between the GBP and CBS, several distinct differences exist. The CBS embodies environmentally sustainable principles like the GBP but has a narrower scope than the GBP.⁵⁶⁴ The primary difference with the CBS criteria is the use of "sector-specific, performance-based minimum standards that are defined by science-based eligibility criteria".⁵⁶⁵ CBS because of their narrow application generally tend to apply to green bonds with a low-carbon component whilst GBP apply to a broader requirements though still green projects.⁵⁶⁶ Verification of the projects within the CBS is done through accredited verifiers approved by the Climate Bonds Standards Board.⁵⁶⁷ This almost prescriptive manner of having an external verification process is meant to ensure credibility and compliance of the set standards.⁵⁶⁸ Approval of eligible projects is done through an assessment by an approved CBS verifier, who then verifies if the issuer has internal processes and

⁵⁵⁸ Markandya, Galarraga and Rübbelke *Climate Finance* 88.

⁵⁵⁹ Markandya, Galarraga and Rübbelke *Climate Finance* 88.

⁵⁶⁰ Breen and Campbell 2017 *NRE* 18.

⁵⁶¹ Breen and Campbell 2017 *NRE* 20.

⁵⁶² Talbot 2017 *Villanova ELJ* 138.

⁵⁶³ Talbot 2017 *Villanova ELJ* 139.

⁵⁶⁴ Talbot 2017 *Villanova ELJ* 142.

⁵⁶⁵ Breen and Campbell 2017 *NRE* 18.

⁵⁶⁶ Talbot 2017 *Villanova ELJ* 142.

⁵⁶⁷ Breen and Campbell 2017 *NRE* 20.

⁵⁶⁸ Park 2018 *Stanford JIL* 25.

controls which can sufficiently track the proceeds.⁵⁶⁹ A report is then presented to the Climate Bonds Standards Board which either approves or declines the project and if allowed to proceed a mark can be used to signal that the project is "green" according to CBS.⁵⁷⁰ The CBS demands that the issuer include physical assets associated with the green bond, a requirement not made by the GBP.⁵⁷¹ This requires the issuer to ensure that the proceeds of the bond are not conflated with other non-complying projects and assurances must be given that the projects are indeed environmentally and socially compliant.⁵⁷²

In reaction to the "broad integrity principles" which existed within the GBP a mandatory requirement within the CBS for tracking and reporting by independent verifiers was done as an assurance framework.⁵⁷³ This was to dispel the notion of the "issuer pay" model in which the issuer would pay the rating agency for its green bond and the same agency would also provide the verification process.⁵⁷⁴ This provides certainty to investors of the independence of the process, its integrity and that the funds will be used to produce environmental and sustainable benefits.⁵⁷⁵

Further certification within the CBS is done by the Climate Science Reference Group, the Technical Working Group and the Industry Working Group.⁵⁷⁶ All three groups are overseen by the Board of the Climate Bonds Standards which ensures implementation of work performed meets the sector specific standards of the CBS.⁵⁷⁷ The CBS provides pre-issuance certification which details specific actions that are to be done before issuance and post-issuance certification which provides for requirements for continued certification.⁵⁷⁸ Due diligence on the financial aspects need to be done by the investor as the CBS is only an environmental standard.

⁵⁶⁹ Breen and Campbell 2017 *NRE* 18.

⁵⁷⁰ Breen and Campbell 2017 *NRE* 18.

⁵⁷¹ Banahan 2019 *Vermont LR* 848.

⁵⁷² Banahan 2019 *Vermont LR* 848.

⁵⁷³ Trompeter 2017 *JSDLP* 7.

⁵⁷⁴ Trompeter 2017 *JSDLP* 7.

⁵⁷⁵ Trompeter 2017 *JSDLP* 7.

⁵⁷⁶ Talbot 2017 *Villanova ELJ* 143.

⁵⁷⁷ Talbot 2017 *Villanova ELJ* 143.

⁵⁷⁸ Climate Bonds Standard Version 2.1 3.

The flawed nature of voluntary guidelines quickly makes itself apparent when one realises the amount of greenwashing in the market. Whilst attempts by the GBP and CBS make attempts at definitions, these systems are flawed. There is no enforcement of the guidelines as these are voluntary organisations, and neither are there repercussions against a deviating issuer despite their sophisticated design.⁵⁷⁹ This does allow the non-complying issuer to still benefit from the tax exempt status that green bonds have in many jurisdictions.⁵⁸⁰ The non-performance risk associated with green bonds arises as a result of a lack of standardisation and regulation which allows the issuer to mislead or provide insufficient information for the environmental benefit of the project.⁵⁸¹ This is extenuated by the fact that there is no recourse to the investor on the issuer who misleads or acts fraudulently.⁵⁸²

The review process is not without its demerits. The issuer as a means of reducing costs could quite simply not hire an external reviewer to verify if the projects are green.⁵⁸³ Legally, there is no requirement to do so, so the investor is always best advised to a historical audit of the issuer.⁵⁸⁴ The audit should determine whether the issuer, for instance, used reputable verifiers with a track record in the green bond space and was the issuer committed to annual comprehensive reporting on the green bond projects.⁵⁸⁵

The veracity of the green bond is tested through the second opinion provided by the external reviewer who provides the assurance that the green bond is indeed green. The second opinion is an independent review of the framework of rules, regulations, and guidelines used by a green bond issuer.⁵⁸⁶ The importance of the projects is critical to the selection process and the investment decision that will ultimately lead to the reduction of GHG.⁵⁸⁷ This process is audited by the second opinion provider.

⁵⁷⁹ Talbot 2017 *Villanova ELJ* 144.

⁵⁸⁰ Trompeter 2017 *JSDLP* 7.

⁵⁸¹ Talbot 2017 *Villanova ELJ* 136.

⁵⁸² Talbot 2017 *Villanova ELJ* 136.

⁵⁸³ Breen and Campbell 2017 *NRE* 20.

⁵⁸⁴ Breen and Campbell 2017 *NRE* 20.

⁵⁸⁵ Breen and Campbell 2017 *NRE* 20. These are all pertinent questions to ask no different from any other investment decision.

⁵⁸⁶ Park 2018 *Stanford JIL* 28.

⁵⁸⁷ Park 2018 *Stanford JIL* 29.

It is important for an issuer of green bonds to have a broader environmental policy that investors can align with, this is considered by the second opinion providers with their reporting frameworks.⁵⁸⁸ CICERO⁵⁸⁹ which is based in Oslo Norway, is the most active second opinion provider on the market. It ranks the green bonds that may be funded on a three-point "Shades of Green" scale. CICERO's second opinions do not analyse or forecast environmental impacts of the green bond financed, but rather focus on the internal frameworks and not the outcomes.⁵⁹⁰ The actual process undertaken between the second opinion provider and the issuer is one in which the second opinion provider reviews documentation and engages in dialogue with the issuer with the net result being a report.⁵⁹¹ A second opinion can be withheld by the second opinion provider if they believe there to be discrepancies between the stated objectives of the green bond.⁵⁹² These reports are private and may be withheld from the public by the issuer diminishing the deterrent effect of revocation.⁵⁹³

The external review process is not an absolute method of ensuring that the environment benefits from environmentally conscious investments. The sustainability component needs to be assessed more effectively. Perhaps green bonds should be critically assessed by multiple organisations independent of the issuers preference of who should do the assessment. One of the strongest arguments in recent times of the green bonds is the failure of the projects to provide tangible environmental benefits. This is why the case is made for a mandatory government mandated "green" definition which assures investors of their contribution towards GHG mitigation.⁵⁹⁴ Too narrow a definition some market participants have found, leads to high costs and

⁵⁸⁸ Park 2018 *Stanford JIL* 29.

⁵⁸⁹ CICERO 2016 <https://www.cicero.oslo.no/en/posts/single/CICERO-second-opinions> "is Norway's foremost institute for climate research. They provide second opinion, independent, research-based evaluations of green bond investment frameworks to determine their environmental robustness. It is the leading global provider of Second Opinions on green bonds".

⁵⁹⁰ Park 2018 *Stanford JIL* 29.

⁵⁹¹ Park 2018 *Stanford JIL* 30.

⁵⁹² Park 2018 *Stanford JIL* 30.

⁵⁹³ Park 2018 *Stanford JIL* 30.

⁵⁹⁴ Trompeter 2017 *JSDLP* 6.

a nascent market for free bonds, whilst too broad a definition makes green-washing too easy an element that could destroy the market.⁵⁹⁵

Creating a competitive environment for green bonds may draw on the productive use of expertise and the full breadth of knowledge available benefitting the opportunities in climate change.⁵⁹⁶ This then could drive the wider greening of economies.⁵⁹⁷ The opportunity as a result of the gap in a lack of consensus on definitions, for governments and international organisations exists in developing governance approaches and developing green standards in the market place.⁵⁹⁸ This potentially extends the existing governance frameworks of policy recommendations on corporate governance of companies, investments, pension funds, infrastructure investments etc.⁵⁹⁹ The greenness of a bond is clearly an evolving topic largely dependent on the policy goals and the primary reasons for an official definition will largely be for reasons of passive monitoring or active consumer regulation to protect against greenwashing.⁶⁰⁰

2.5.6.3 Concluding remarks

From the above discussion, the GBP in relation to ESG, should therefore be expanded to make provision for:

- Exponential growth and scaling of technology and decrease in price of green infrastructure;
- Transparent funding of sustainable and renewable energy infrastructure;
- A regulated framework for green bond growth.

⁵⁹⁵ Inderst *et al*/2012 <https://www.oecd-ilibrary.org/content/collection/20797117?sort=pubdateasc&page=2> 7.

⁵⁹⁶ Inderst *et al*/2012 <https://www.oecd-ilibrary.org/content/collection/20797117?sort=pubdateasc&page=2> 7.

⁵⁹⁷ Inderst *et al*/2012 <https://www.oecd-ilibrary.org/content/collection/20797117?sort=pubdateasc&page=2> 7.

⁵⁹⁸ Inderst *et al*/2012 <https://www.oecd-ilibrary.org/content/collection/20797117?sort=pubdateasc&page=2> 38.

⁵⁹⁹ Inderst *et al*/2012 <https://www.oecd-ilibrary.org/content/collection/20797117?sort=pubdateasc&page=2> 7.

⁶⁰⁰ Inderst *et al*/2012 <https://www.oecd-ilibrary.org/content/collection/20797117?sort=pubdateasc&page=2> 41.

2.6 How do green bonds differ from other financial instruments?

Green bonds need to be distinguished from other types of financial mechanisms such as (a) public finance and (b) project financing. Public funding will be discussed first followed by project financing.

Public funding has historically been used to finance infrastructural development with governments being the sole actors in this field.⁶⁰¹ Population growth and general mismanagement and misalignment with developmental goals have led to "public deficits, increased public debt to the GDP ratios and, at times the inability of the public sector to deliver efficient investment spending", with reduced public funding being channeled towards infrastructure.⁶⁰²

As indicated before, the mobilisation of large capital amounts managed by institutional investors is required to address GHG by means of constructing low carbon and resilient infrastructure. The bulk of this capital is in the private sector.⁶⁰³ The largest amounts of capital within the private sector are the bond markets estimated to be over US\$100 trillion with a significant portion (72%) of this amount held by institutional investors such as pension funds, mutual funds, insurance companies and sovereign wealth funds that all have exposure to issues of climate change.⁶⁰⁴ Increased prudential regulation has led to reduced investments in infrastructure financing with acknowledgement being made that alternative sources of funding will be required to support infrastructure development.⁶⁰⁵

⁶⁰¹ OECD 2015 <http://www.oecd.org/finance/private-pensions/Infrastructure-Financing-Instruments-and-Incentives.pdf> 7.

⁶⁰² OECD 2015 <http://www.oecd.org/finance/private-pensions/Infrastructure-Financing-Instruments-and-Incentives.pdf> 7.

⁶⁰³ Kidney, Clenaghan and Oliver "Climate bonds" 241.

⁶⁰⁴ Kidney, Clenaghan and Oliver "Climate bonds" 241.

⁶⁰⁵ OECD 2015 <http://www.oecd.org/finance/private-pensions/Infrastructure-Financing-Instruments-and-Incentives.pdf> 7. There is no standard definition for infrastructure by way of definition, but the World Development Report considers infrastructure as an umbrella term for several activities. However, infrastructure is "easier to identify than describe". It broadly covers "roads, bridges, tunnels, railways, harbours, airports, tramways, subways, irrigation networks,

It is therefore critical to understand the unique characteristics of infrastructure financing, namely (a) capital intensity, (b) economies of scale and externalities, (c) heterogeneity, complexity and presence of a large number of parties and (d) opaqueness. Capital intensity and longevity are characterised by high up-front costs, lack of liquidity and a long asset life which generate substantial financing requirements and a need for dedicated resources on the part of investors to understand the risks involved and to manage them. Infrastructure projects may not generate positive cash flows in the early phases, which may be characterised by high risks and costs due to pre-developmental and construction; yet they tend to produce stable cash flows once the infrastructure facility moves into operational phase.⁶⁰⁶ Some infrastructure assets, where users do not pay for services, do not generate cash flows at all, requiring government intervention in order to create investment value.⁶⁰⁷ Economies of scale and externalities influence infrastructure development as it often comprises natural monopolies such as highways or water supply which exhibit increasing returns to scale and can generate social benefits. While the direct payoffs to an owner of an infrastructure project may be inadequate for costs to be covered, the indirect externalities can still be beneficial for the economy as a whole. Such social benefits are fundamentally different to measure. Even if they can be measured, charging for them may not be feasible or desirable.⁶⁰⁸ Heterogeneity, complexity and presence of a large number of parties relates to the fact that infrastructure facilities tend to be heterogeneous and unique in their nature, with complex legal arrangements structured to ensure proper distribution of payoffs and risk-sharing to align the incentives of all parties. The uniqueness of infrastructure projects in terms of the services they provide and their structure and potential

dams and canals, water pipelines, water purification and treatment, potable water supply, power lines, power plants, power distribution networks, oil and gas pipelines, sanitation and sewage facilities, health and housing services, urban services, communications and telecommunications networks".

⁶⁰⁶ OECD 2015 <http://www.oecd.org/finance/private-pensions/Infrastructure-Financing-Instruments-and-Incentives.pdf> 8.

⁶⁰⁷ OECD 2015 <http://www.oecd.org/finance/private-pensions/Infrastructure-Financing-Instruments-and-Incentives.pdf> 8.

⁶⁰⁸ OECD 2015 <http://www.oecd.org/finance/private-pensions/Infrastructure-Financing-Instruments-and-Incentives.pdf> 8.

complexity makes infrastructure investments less liquid.⁶⁰⁹ Opaqueness in infrastructure projects relates to the lack of transparency, due diverse structures. This also applies to Public Private Partnerships (PPP) models. The information required by investors to assess these risk-structures and the infrastructure market in general is lacking or highly scattered, creating uncertainty. The lack of a clear benchmark for measuring investment performance is also seen by many investors as one of the main barriers to infrastructure investment. The lack of transparency and adequate data increase risks for those engaging in infrastructure financing.⁶¹⁰

The financing of infrastructure has certain unique characteristics and the understanding of these characteristics enables a greater perception of the funding models available.⁶¹¹ Public funding has previously been the source of most infrastructural projects in developing countries and the reasons are varied as to why private capital has been reluctant to finance large infrastructural projects.⁶¹² Research suggests that the following is unattractive to private investors:

- High risk, low returns, slow pace of maturity and long gestation periods;⁶¹³
- High risk, longer maturity, fixed and low (but positive) real returns, long sunk costs;⁶¹⁴ and
- High risk portfolios, long gestation periods, illiquid returns, high capital outlays, difficult valuations due to taxation, pricing rules, complex nature and involvement of multiple risks.⁶¹⁵

Private investment generally finances infrastructure by means of stand-alone infrastructure project finance or through corporate balance sheet finance and other

⁶⁰⁹ OECD 2015 <http://www.oecd.org/finance/private-pensions/Infrastructure-Financing-Instruments-and-Incentives.pdf> 8.

⁶¹⁰ OECD 2015 <http://www.oecd.org/finance/private-pensions/Infrastructure-Financing-Instruments-and-Incentives.pdf> 8.

⁶¹¹ Kumari and Sharma 2017 *IJCIP* 49-65.

⁶¹² Kumari and Sharma 2017 *IJCIP* 49-65.

⁶¹³ Kumari and Sharma 2017 *IJCIP* 49-65.

⁶¹⁴ Kumari and Sharma 2017 *IJCIP* 49-65.

⁶¹⁵ Kumari and Sharma 2017 *IJCIP* 49-65.

balance sheet-based structures.⁶¹⁶ Investors will base their decision on what to finance dependent upon the nature of the asset (debt, equity, listed or unlisted), regulatory and tax considerations and how the investors have defined and allocated infrastructure in their portfolios, based on their asset/liability framework.⁶¹⁷ Other deliberations in the investment decision which an investor may make is diversification and level of sophistication: larger funds are able to commit their capital directly to projects with the smaller investors limited to capital pool channels and corporate investments.⁶¹⁸

Green bonds differ from other types of generic finance models available in that they are a market response to green and sustainable financing, significant in purpose as a financial opportunity against intensifying environmental pollution. They are premised on principles which factor ESG and GBP with oversight from Second Party Opinion and Verification for the lifetime of their issuance. Reputational risk in a media savvy broadened investor base is a risk most issuers of green bonds would not dare risk because of the immediate sanction that is possible from the investors who are aware of declarations made and the facts. Green bonds have a direct input and alignment with the creation of a green economy in that they finance the projects or infrastructure that meets the objectives of a low carbon economy and this can be leveraged with the investors who are seeking out such types of investments. They are "a vector of choice in financing the energy transition" as they lower the cost of capital. Green bonds are issued according to a set criteria and guidelines, to be held by a broad-based investor base which is able to hold the issuer to account and therefore serve as a powerful tool for climate change mitigation.

⁶¹⁶ OECD 2015 <http://www.oecd.org/finance/private-pensions/Infrastructure-Financing-Instruments-and-Incentives.pdf> 14.

⁶¹⁷ OECD 2015 <http://www.oecd.org/finance/private-pensions/Infrastructure-Financing-Instruments-and-Incentives.pdf> 14.

⁶¹⁸ OECD 2015 <http://www.oecd.org/finance/private-pensions/Infrastructure-Financing-Instruments-and-Incentives.pdf> 14.

2.7 Conclusion

This chapter was an exposition of green bonds as a financial mechanism which has grown from a niche market in 2007 to the rapid growth experienced in 2019 wherein the value of issued green bonds was US\$257.7 billion.⁶¹⁹ The historical overview provides an analysis of green bonds. The theoretical framework explains the intricate relationship between climate change and mobilised climate finance, in particular green bonds as an environmentally responsible, effective investment and response mechanism to the impacts of climate change at the global level. Green bonds have been shown to be able to leverage the broader bond market by attracting new and diverse investors who seek less volatile investment instruments. Green bonds similarity in yield to bonds has been a catalyst for investors to align their investments with the objectives of the *Paris Agreement* in reducing carbon emissions and building low carbon resilient economies.

The bond market is the backbone of the green bond market and definitions of bonds and distinctions with green bonds were provided in this chapter as well as the reasons why in particular the bond market can provide the transition and leverage to financing climate change objectives. Green bonds for purposes of this study was defined as follows:

A green bond is a socially responsible investment, which meets the objectives of the socially conscious investor, is a financial mechanism or a debt instrument under which its use of proceeds is structured for the purpose of financing environmental, social and governance issues as well as financing low carbon infrastructure that meet the Green Bond Principles. Such bond provides for a financial return and is repayable over an agreed schedule and its proceeds are constantly evaluated subject to environmental social governance principles within the African and South African context.

⁶¹⁹ CBI 2019 <https://www.climatebonds.net/2020/02/green-bond-highlights-2019-behind-headline-numbers-climate-bonds-market-analysis-record-year>.

Green bonds are driven by various factors and environmental and social consciousness has given rise to the socially conscious investor who has been attracted to this type of investment because of the dual purpose of the green bonds serving environmental and financial return objectives. Oversubscription by these investors in green bonds has shown their commitment and confidence to environmental stewardship by companies that are communicating their climate change strategies in the types of investment decisions they make.

The impacts of climate change are now said to be unequivocal. Climate change urgency cannot be ignored in the context of developing countries which are said to be vulnerable and least resourced to adequately deal with these impacts. Now more than ever is there a need for realignment of economic policy with climate change objectives if the global response on limiting global warming to well below 2 degrees Celsius above pre-industrial levels, whilst pursuing a more sustainable increase in temperature not more than 1.5 degrees Celsius is to be achieved.

Climate change mitigation was discussed and South Africa's mitigation strategies which it committed to as being ambitious, measurable, reportable and verifiable were analysed. The emergence of climate finance has been attributed to the realisation by the UNFCCC to mobilise finance for developing countries respond to climate change by building low-emission and climate resilient pathways. Green bonds are well situated to address climate change mitigation.

Sustainable development's long-term goal is rooted in the relationship between the economy and the environment. The interconnectedness of sustainable development, sustainable energy and environmental social governance was discussed in detail. Sustainable energy in relation to sustainable development for purpose of this study was defined as follows:

ESG has become a significant metric in the investment decision because the investor has an interest whether the modern company acts in a socially and environmentally ethical way, influencing their decision making. There is now consensus that asset managers should include ESG risks and opportunities in their investment decisions.

The green bond framework distinguishes itself from other financial instruments because of its requirement of use of proceeds. Public finance in its structure is not by design comparable to the use of proceeds model. Green bonds require additional and transparent disclosure of the use of proceeds through the reporting mechanisms, third-party review and on-going verification of eligible projects.

The exponential growth of green bonds in recent years as a response to climate change issues has provided an alternative and innovative investment case for environmental objectives. Financial markets may change and adapt to climate change considerations as a result of the objectives of green bonds, which promote transparency through disclosure of financed projects impact on the environment, evaluation processes in the projects built and general accountability by the financial sector on climate change.

In the next chapter the international climate change framework, climate finance and environmental social governance will be discussed from an international law, foreign law, national law and best practice perspectives to inform South African law.

Chapter 3

International and African regional climate change mitigation law and governance

3.1 Introduction

The international climate change framework apprised the concept of climate finance and ESG. Green bonds as a form of climate finance developed subsequently. In this chapter the international climate change legal framework will be discussed firstly, with reference to the UNFCCC, *Kyoto Protocol* and *Paris Agreement*. Regional legal frameworks regulating climate change will then be discussed in relation to the European Union and African Union. The European Union is referred to as the global leader in climate change law and the African Union is discussed because of its vulnerability, high exposure and low adaptive capacity.⁶²⁰

The concept of climate finance is analysed in relation to climate change mitigation, while the discussion of ESG will also be informed with reference to best practices that developed in the world. The discussion on green bonds relates firstly to the international law framework and the link to climate finance. Green bonds are also regulated by international voluntary standards. They include the ICMA Green Bond Standards, Climate Bonds Standard, the EU Green Bonds Standard as well as a draft ISO Standard: ISO 14030-1 on environmental performance evaluation for green debt instruments. Other international financial instruments are distinguished from green bonds in relation to their "use of proceeds" criterion. The international context in relation to climate change will be discussed first, followed by the regional context.

⁶²⁰ ACPC 2013 <https://www.uncclearn.org/wp-content/uploads/library/uneca21.pdf> 1.

3.2 International climate change law regime

In this paragraph the background to and historical development of climate change law will be provided, followed by a discussion of the UNFCCC, the *Kyoto Protocol* and the *Paris Agreement*.

3.2.1 Background to and historical development of international climate change law

The international climate change regime is complex and consists of agreements and mechanisms negotiated over a period of time and to a certain extent some negotiations are still on-going.⁶²¹ These negotiations include issues such as the transition to renewable energy and how it is to be financed.

Climate change was identified in the First World Climate Conference in 1979 as an urgent world problem by issuing a declaration calling on governments to anticipate and guard against potential climate hazards.⁶²² The development of an international climate change regime began in the late 1980s and early 1990s with the discovery of the "ozone hole", and the publication of the Brundtland Report, "Our Common Future".⁶²³ The concept of climate change had already been established by the Swedish Chemist Svante Arrhenius in 1896 but as a political concept this was to take another one hundred years, and its emergence in the early 1990s caused major differences between Western countries.⁶²⁴ The differences were primarily based on costs of abatement.⁶²⁵ In 1990, the United Nations General Assembly (UNGA) adopted a Resolution entitled "Protection of global climate for the present and future generations of mankind"⁶²⁶ providing a mandate for the negotiation of a Framework

⁶²¹ For a historical overview, see Gilder and Swanepoel "Climate change" 744-752.

⁶²² UNFCCC 2006 <https://unfccc.int/resource/docs/publications/handbook.pdf> 17.

⁶²³ Bodansky "The history of the global climate change regime" 23.

⁶²⁴ Bodansky "The history of the global climate change regime" 29.

⁶²⁵ Bodansky "The history of the global climate change regime" 29. According to McKinsey an abatement cost curve or commonly known as an abatement potential describes the magnitude of potential GHG reductions which would be technologically and economically feasible to achieve. This is measured in tonnes (or which is abbreviated as carbon dioxide equivalents, or CO₂e). This cost according to McKinsey if an upfront investment of €200-300 billion per year by 2030. This is possible if an upfront investment of €530 billion per year is made and is incrementally raised to €810 billion by 2030. Inaction would exceed economic costs to avert climate change.

⁶²⁶ UN Doc 45/212 (1990) para 1.

Convention on Climate Change.⁶²⁷ This resolution established the Intergovernmental Negotiating Committee which successfully negotiated the eventual UNFCCC.⁶²⁸ The UNFCCC was the first binding legal instrument on climate change at the international level with near universal membership of 197 parties to the Convention.⁶²⁹

3.2.2 UNFCCC

In overcoming the complexity of international agreements and mechanisms,⁶³⁰ the need for consensus is critical if global participation is to be achieved. Allocation of resources and support for technology transfer is required in achieving the ultimate objective of the UNFCCC which is that of stabilisation of GHG concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference in the climate system.⁶³¹ Such limit for anthropogenic GHG emission is not stated in the objective of the UNFCCC, neither does it indicate the level of total GHG concentrations beyond which "dangerous anthropogenic interference with the climate system" would occur.⁶³²

⁶²⁷ UNFCCC 2006 <https://unfccc.int/resource/docs/publications/handbook.pdf> 53. For a discussion on the UNFCCC see Glazewski *Environmental Law*.

⁶²⁸ UNFCCC 2006 <https://unfccc.int/resource/docs/publications/handbook.pdf> 53. See Kidd *Environmental Law*.

⁶²⁹ UNFCCC 2020 <https://unfccc.int/about-us/about-the-secretariat>.

⁶³⁰ The UNFCCC recognises the complexity and response required in addressing the global challenge in its preamble by "acknowledging that the global nature of climate change calls for the widest possible cooperation by all countries and their participation in an effective and appropriate international response, in accordance with their common but differentiated responsibilities and respective capabilities and their social and economic conditions". The UNFCCC defines 'climate change' in Article 1(2) as "meaning a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods".

⁶³¹ Preamble UNFCCC. The main objective of the UNFCCC is articulated in Article 2 as follows: "the stabilisation of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner". See also the discussion of the UNFCCC in Gilder and Swanepoel "Climate change" 749-750.

⁶³² UNFCCC 2006 <https://unfccc.int/resource/docs/publications/handbook.pdf> 21. For a discussion on the UNFCCC see Glazewski *Environmental Law*; Gilder and Stiles 2019 *CCLR* 270-279; Kidd *Environmental Law*.

The UNFCCC preamble stresses the urgency of mitigation of GHG⁶³³ and urges for immediate action by developed countries in a flexible manner on the basis of clear priorities and comprehensive strategies to reduce the devastating effects of GHG.⁶³⁴ It can be inferred that the reference to flexibility is a recognition of the different developmental stages various parties may be experiencing in building their economies, while addressing GHG emissions.⁶³⁵ This stabilisation of GHG is generally seen as mitigation of such gases and the IPCC defines "mitigation as a human intervention to reduce emissions or enhance the sinks of greenhouse gases".⁶³⁶ The more scientific definition by the IPCC states that mitigation is:

Technological change and substitution that reduce resource inputs and emissions per unit of output. Although several social, economic and technological policies would produce an emission reduction, with respect to climate change, mitigation means implementing policies to reduce GHG emissions and enhance sinks.⁶³⁷

These gases identified under Article I are said to be "those gaseous constituents of the atmosphere, both natural and anthropogenic, that absorb and re-emit infrared radiation".⁶³⁸

The UNFCCC acknowledged that annexed countries in developing their economies would require access to resources to achieve sustainable social development and that such growth would be accompanied by greater energy consumption. Energy

⁶³³ The Preamble states: "Noting that the largest share of historical and current global emissions of greenhouse gases has originated in developing countries, that per capita emissions in developing countries are still relatively low and that the share of global emissions originating in developing countries will grow to meet their social and development needs."

⁶³⁴ Preamble UNFCCC 4. The Fifth Assessment Report of the IPCC explicitly showed that the world is warming up faster than previously anticipated and the rate of acceleration of climate change will continue at a pace determined by past, present and future emissions. See IPCC 2014 <https://www.ipcc.ch/report/ar5/> 10.

⁶³⁵ The Intergovernmental Panel on Climate Change (IPCC)'s Climate Change Global Warming of 1.50 C Report states that "Human activities are estimated to have caused approximately 1.00 C of global warming above pre-industrial levels, with a likely range of 0.80 C to 1.20 C. Global warming is likely to reach 1.50 C between 2030 and 2052 if it continues to increase at the current rate". See IPCC 2018 <https://www.ipcc.ch/sr15/chapter/glossary/> 6. The energy supply sector has contributed the most significantly towards GHG emissions which rose by 145 per cent since 1970 and 2004, largely from the proliferation of coal-fired power plants. See IPCC 2018 <https://www.ipcc.ch/sr15/chapter/glossary/> 3.

⁶³⁶ IPCC 2020 <https://www.ipcc.ch/sr15/chapter/glossary/>.

⁶³⁷ IPCC 2007 <https://www.ipcc.ch/report/ar4/wg3/> 818.

⁶³⁸ Article 1 of UNFCCC 7.

efficiency would be required to decrease the amount of GHG emissions through the application of new technologies that are economically and socially beneficial.⁶³⁹ As a central and necessary element of the climate change regime the UNFCCC stipulates that, in accordance with the principle of "common but differentiated responsibilities and respective capabilities" developed countries shall "provide new and additional financial resources" to assist developing countries in fulfilling their obligations under the Convention as per Article 11.⁶⁴⁰ The Conference of the Parties (COP) according to Article 7.2 is the responsible body for reviewing the implementation of the Convention and promoting the effective implementation the UNFCCC. This role includes the responsibility of mobilising financial resources required by the parties in implementing their strategies.⁶⁴¹

In providing for mitigation, Article 3(3) states that "Parties should take precautionary measures to anticipate, prevent or minimise the causes of climate change and mitigate its adverse effects".⁶⁴² Global benefits of mitigation should be achieved at the least possible cost and this should form the basis of measures when taking into account the different socio-economic contexts, measures must be comprehensive, cover all relevant sources, sinks and reservoirs of GHGs and adaptation must comprise of all economic sectors including interested parties.⁶⁴³

According to Bodansky, "principles [of international climate change law]⁶⁴⁴ embody legal standards, but the standards they contain are more general than commitments and do not specify particular actions".⁶⁴⁵ Principles in general act as a guide to the parties in achieving their obligations and actions, therefore apply to the parties and the Convention and not as general law.⁶⁴⁶ Article 3 of the UNFCCC states four

⁶³⁹ Preamble UNFCCC 6.

⁶⁴⁰ Pickering, Betzold and Skovgaard 2017 *Int'l Environ Agreements* 4.

⁶⁴¹ Article 7(2)(h) of UNFCCC.

⁶⁴² Article 3(3) of UNFCCC.

⁶⁴³ Article 3(3) of UNFCCC.

⁶⁴⁴ Own insertion.

⁶⁴⁵ Bodansky 1993 *Yale JIL* 501.

⁶⁴⁶ Bodansky 1993 *Yale JIL* 501.

principles namely the principle of equity, the precautionary principle, the principle of sustainability and the principle of common but differentiated responsibilities.⁶⁴⁷

Developed and developing countries are separated into Annex I and Annex II countries. Developed countries which are identified under Article 4.2(a) and 4.2(b) of the UNFCCC as Annex I countries commit themselves to mitigation of climate change measures under their national policies and corresponding measures.⁶⁴⁸ Policies are a course of action taken and/or mandated by a government, to enhance mitigation or adaptation.⁶⁴⁹ The IPCC defines measures in the context of climate change policy as technologies processes or practices that contribute to mitigation such as renewable energy technologies, waste minimisation processes and public transport commuting practices.⁶⁵⁰ The measures to be undertaken by the UNFCCC should be appropriate for the specific conditions of each Party and should be integrated with national development programmes.⁶⁵¹ It is the developed countries which should take the "lead in combatting climate change and the adverse effects thereof."⁶⁵² All Parties are encouraged to protect the climate for present and future generations and there is recognition that there will be disproportionate adverse effects of climate change on those vulnerable countries that will bear the abnormal burden of these effects.⁶⁵³ Adverse risks can only be inferred to mean those risks that will affect the economic sustainability of countries and such adversity would cause disproportionate hardships on poorer nations without the resources to mitigate or adapt to such effects.

There is a consistent narrative in which economic circumstances will be pivotal in the effectiveness of strategies being implemented, and such strategies will need to be constantly re-evaluated under the changing circumstances.⁶⁵⁴ The re-evaluation must consider the economic circumstances, sustainable economic growth and the

⁶⁴⁷ Article 3 of UNFCCC. Tollefson "A precautionary tale" 17-38; Sands *Principles of international environmental law*.

⁶⁴⁸ Article 4 of UNFCCC 10.

⁶⁴⁹ IPCC 2014 https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc_wg3_ar5_annex-i.pdf 1268.

⁶⁵⁰ IPCC 2014 https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc_wg3_ar5_annex-i.pdf 1266.

⁶⁵¹ Article 3(4).

⁶⁵² Article 3 of UNFCCC 9.

⁶⁵³ Article 4 of UNFCCC 10.

⁶⁵⁴ UNFCCC 4.

technological and financial needs of a country.⁶⁵⁵ For the effective implementation of strategies, they need to be localised to the needs of the people. Accordingly, many climate change mitigation proposals are complementary rather than mutually exclusive such as the protection of coastal wetlands, promoting the benefits of sustainable agroforestry, decentralisation of energy distribution, securing indigenous people's land rights and the improvement of mass transit.⁶⁵⁶

One of the principles of international climate change law, namely sustainable development,⁶⁵⁷ is to be promoted in developing countries as part of the call for the widest possible cooperation and there is an obligation on developed countries to adequately provide for financial support and environmentally sound technology transfer.⁶⁵⁸ Such support is to enable developing countries to address climate change problems in the context of relevant scientific, technical and economic considerations which are continually being re-evaluated and in constant flux.⁶⁵⁹ Annex I countries are part of the OECD which consist of 37 member countries.⁶⁶⁰

All parties under Annex I are required to adopt national policies, share such data and take corresponding measures on the mitigation of climate change.⁶⁶¹ Several approaches are referred to in Article 4(1)(b) and 4(2)(a) of the UNFCCC which provide for options of mitigation of climate change through enhancement of sinks and reservoirs of GHG.⁶⁶² The submission of national GHG inventories is to be done by all parties and such submissions must provide detailed descriptions of mitigation policies and projections and their impact on GHG emissions.⁶⁶³ The submission of reports by Non-Annex I countries is contingent on them receiving funding for the preparation of the reports.⁶⁶⁴ The disparities in economic growth and technological growth between

⁶⁵⁵ Article 3(5) of UNFCCC.

⁶⁵⁶ Suarez 2020 <https://www.wri.org/blog/2020/02/climate-change-mitigation-adaptation-strategies>.

⁶⁵⁷ See para 2.5.5.

⁶⁵⁸ Article 4(14) of UNFCCC.

⁶⁵⁹ Article 4(14) of UNFCCC.

⁶⁶⁰ OECD date unknown <https://www.oecd.org/about/>.

⁶⁶¹ Article 4(2)(a) of UNFCCC.

⁶⁶² Article 4(1)(b) and 4(2)(a) of the UNFCCC.

⁶⁶³ Article 4(1)(a) of UNFCCC.

⁶⁶⁴ Article 4(7) and (8) of UNFCCC.

developed and developing countries means that developing countries first and overriding commitment to the Convention is related to financial resources and technology transfer after having comprehensively taken into account economic, social development and poverty eradication.⁶⁶⁵ A further duty is imposed on developed countries to reduce their GHG emissions to 1990 levels which forms the base year for most Parties in calculating their national GHG inventory and regular detailed reporting is also required.⁶⁶⁶ Reporting obligations are detailed in Article 12 and distinguish the various commitments developed and developing countries have on their reporting requirements.⁶⁶⁷ All parties shall communicate their national inventory of anthropogenic emissions of gases not controlled by the *Montreal Protocol*⁶⁶⁸ detailing the steps taken or envisaged to be taken.⁶⁶⁹ The third national communications by Annex I Parties' on their policies and measures provided more comprehensive details on all covered sources of emissions.⁶⁷⁰ Parties provided a clear indication of a shift towards implementing new climate-specific policies and measures, such as emissions trading, carbon taxes and green certificate trading.⁶⁷¹ The energy sector which is the largest source of emissions provided the greatest number of policies and measures reported on.⁶⁷²

Annex I reporting requirements are more stringent and require greater levels of detail in the description of policies and measures taken as well as specific estimates of the effects that policies and measures will have on emissions.⁶⁷³ Developing countries may voluntarily propose projects to be financed and may include estimations of incremental costs required for the reduction of GHG.⁶⁷⁴

⁶⁶⁵ Article 4(7) of UNFCCC.

⁶⁶⁶ Article 42(b) of UNFCCC.

⁶⁶⁷ Article 12 of UNFCCC.

⁶⁶⁸ Australian Government 1987 <https://www.environment.gov.au/protection/ozone/montreal-protocol#:~:text=The%20Montreal%20Protocol%20on%20Substances,protect%20the%20earth's%20ozone%20layer.>

⁶⁶⁹ Article 12 of UNFCCC.

⁶⁷⁰ UNFCCC 2006 <https://unfccc.int/resource/docs/publications/handbook.pdf> 78.

⁶⁷¹ UNFCCC 2006 <https://unfccc.int/resource/docs/publications/handbook.pdf> 78.

⁶⁷² UNFCCC 2006 <https://unfccc.int/resource/docs/publications/handbook.pdf> 78.

⁶⁷³ Article 12 of UNFCCC.

⁶⁷⁴ Article 12 of UNFCCC.

The ultimate objective of the UNFCCC as stated in Article 2, is the stabilisation of GHG concentrations "at a level that would prevent dangerous anthropogenic interference with the climate system".⁶⁷⁵ The UNFCCC does not directly define the "level" but it is however characterised as being achieved "within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner".⁶⁷⁶ Developing countries may find themselves at odds with the definition of physical indicators as being purely "dangerous indicators" (in only the physical sense), this is because whilst the physical indicators themselves may not be in dispute, it is in the how these effects will be dealt with especially by the vulnerable communities beyond the physical and contextualised in the socio-economic sense.⁶⁷⁷

The socio-economic indicators as a result of the impacts of the physical impacts need to be viewed in the context of reduced development capacity, decrease in human welfare and impacts on the health and well-being of those affected.⁶⁷⁸ The International Energy Agency (IEA) has estimated that over three-quarters of energy investment is in fossil fuels and this is compounded by government subsidies.⁶⁷⁹ If emissions are to be decreased then climate financial flows need to be aligned with this issue "in a pathway which is towards low greenhouse gas emissions".⁶⁸⁰

The emissions data for 2007 which included the United States of America (USA) and Australia indicated that Annex I countries were on track to meet their emissions reduction commitments, with a decrease of 4 per cent during the period 1990-2007.⁶⁸¹ The reduction comes as a result of economic decline in countries described as economies in transition from Eastern Europe and Central Europe in the 1990s, however there has been economic growth post 2000.⁶⁸² The long-term projection is

⁶⁷⁵ Article 2 of UNFCCC.

⁶⁷⁶ Article 2 UNFCCC.

⁶⁷⁷ Kelkar 2020 https://www.devalit.org/newsletter/nov03/of_8.htm.

⁶⁷⁸ Kelkar 2020 https://www.devalit.org/newsletter/nov03/of_8.htm.

⁶⁷⁹ Piggot *et al* 2018 *Climate Policy* 1195.

⁶⁸⁰ Piggot *et al* 2018 *Climate Policy* 1195.

⁶⁸¹ UNFCCC 2020 https://unfccc.int/files/press/backgrounders/application/pdf/press_factsh_mitigation.pdf.

⁶⁸² UNFCCC 2020 https://unfccc.int/files/press/backgrounders/application/pdf/press_factsh_mitigation.pdf.

that there will be an increase in anthropogenic emissions as a result of economic growth adversely affecting sustainable development. Given the historical responsibility and economic capabilities, Annex I countries will be required to lead in deep emission cuts and this will also need the transfer of technologies to developing countries with projected growing economies and energy demand, to make use of clean technologies and improved energy efficiency.⁶⁸³ Article 2 may be criticised for not having been more pronounced on the phasing down of fossil fuel use for energy consumption.⁶⁸⁴ This would have created more stringent commitments to low carbon technologies and integrated UNFCCC commitments to global climate goals. Most climate policy initiatives focus on reducing demand and not the supply of fossil fuels.⁶⁸⁵

3.2.3 *Kyoto Protocol*

The *Kyoto Protocol* following the blueprint of the UNFCCC, was adopted on 11 November 1997 in Kyoto Japan at the third Conference of the Parties (COP 3) and shares the same objectives as the UNFCCC.⁶⁸⁶ The main objective of the UNFCCC was to stabilise greenhouse gas emissions, by making use of the precautionary principle, and preventing the ecological and socio-economic impacts of climate change.⁶⁸⁷ This legally binding international agreement came into force on 16 February 2005 as a response to creating binding commitments to GHG reductions.⁶⁸⁸ Other fundamental architectural features of the *Kyoto Protocol* are that it makes for allowance of "flexibility with respect to the parties' national implementation of their commitments, allows for flexibility in emissions trading, it takes a comprehensive approach by covering both GHG and sequestration sinks, and by including not only CO₂ and N₂O, but also the three synthetic GHGs".⁶⁸⁹ The first commitment period was

⁶⁸³ UNFCCC 2020 https://unfccc.int/files/press/backgrounders/application/pdf/press_factsh_mitigation.pdf.

⁶⁸⁴ Piggot *et al* 2018 *Climate Policy* 1193.

⁶⁸⁵ Piggot *et al* 2018 *Climate Policy* 1193.

⁶⁸⁶ UNFCCC 2020 https://unfccc.int/kyoto_protocol. For more information on the *Protocol* see Gilder and Swanepoel "Climate change" 750-752.

⁶⁸⁷ Lovett 2005 *JAL* 94.

⁶⁸⁸ UNFCCC 2020 https://unfccc.int/kyoto_protocol; Breidenich *et al* 1998 *American JIL* 315; Kidd 2011 *Environmental Law*.

⁶⁸⁹ Breidenich *et al* 1998 *American JIL* 319.

between 2008 and 2012 with the second commitment period, the Doha Amendment to the protocol being between 2013 and 2020 with 36 states so far having accepted their commitments and a further 144 required to enter into force.⁶⁹⁰ It operationalises the UNFCCC and makes quantitative commitments on industrialised countries to limit their GHG emissions in accordance with agreed individual targets.⁶⁹¹ The binding targets on the 37 industrialised countries and the European Community collectively amount to an average emissions reduction of 5 per cent from 1990 levels over the five year period from 2008-2012.⁶⁹² The quantified emission limitation and reduction commitments (QUERLO) that were imposed on developed countries set limits which should not be exceeded with the view of reducing overall emissions and provides greater certainty on reduction.⁶⁹³ Africa because of its weak economic macros is the most vulnerable to climatic impacts and these impacts will have major effects on agriculture and infrastructure.⁶⁹⁴ Annexed country commitments take the form of absolute emission targets which apply to the listed gases in Annex A.⁶⁹⁵ All countries are requested by the *Kyoto Protocol* to adopt measures on mitigation and report periodically, but a heavier burden is placed on annexed countries to do so.⁶⁹⁶ Non-Annex I countries bear the brunt of climate change and in terms of equity and climate change impacts, Africa, though the least responsible for climate change is the most vulnerable to its impacts.⁶⁹⁷ Economically, to receive CDM funding, African countries may have to set up institutional infrastructure and skilled human resources to process the bureaucratic nature of the mechanism.⁶⁹⁸ This according to Barnard is unlikely to happen in the context of African countries given that the volume of emissions is comparatively low and "only if sufficient investment is generated will it be worthwhile to set up an institution primarily for CDM".⁶⁹⁹ The *Kyoto Protocol* is systemised on an annex-based structure. Annexed countries are bound by the *Protocol* which places a

⁶⁹⁰ UNFCCC 2020 https://unfccc.int/kyoto_protocol; Glazewski *Environmental Law*.

⁶⁹¹ UNFCCC 2020 https://unfccc.int/kyoto_protocol.

⁶⁹² Gillenwater and Seres 2011 *Greenhouse Gas Measurement and Management* 6.

⁶⁹³ Article 4(1) of UNFCCC.

⁶⁹⁴ Lovett 2005 *JIL* 95.

⁶⁹⁵ *Kyoto Protocol to the United Nations Framework Convention on Climate Change*, Annex A.

⁶⁹⁶ UNFCCC 2020 https://unfccc.int/kyoto_protocol.

⁶⁹⁷ IEA 2002 <https://www.iea.org/reports/key-world-energy-statistics-2020>. IEA, Paris, France.

⁶⁹⁸ Barnard *Nuclear energy in Africa* 43.

⁶⁹⁹ Barnard *Nuclear energy in Africa* 43.

heavier burden on them based on the principle of "common but differentiated responsibility and respective capabilities" as a result of the recognition that they are responsible for the current high levels of GHG emissions in the atmosphere.⁷⁰⁰ Thus, annexed countries that have committed to the Kyoto Principle are obliged to take on emission-reduction targets.⁷⁰¹

The *Kyoto Protocol* consequently imposes emission reduction targets (creating a cap on emissions) on Annex I countries to:

Individually or jointly, ensure that the aggregate anthropogenic carbon dioxide equivalent emissions of the greenhouse gases listed in Annex A do not exceed their assigned amounts, calculated pursuant to their quantified emission limitation and reduction commitments inscribed in Annex B and in accordance with the provisions of this Article, with a view to reducing their overall emissions of such gases by at least 5 per cent below 1990 levels in the commitment period 2008 to 2012.⁷⁰²

The commitment period is not static as per Article 3(9) in which the Conference of the Parties (COP's) "shall initiate the consideration of such commitments".⁷⁰³ The *Kyoto Protocol* is very flexible and non-specific on how countries can meet their GHG emissions reductions.⁷⁰⁴ Each country in meeting its quantified emission limitation and reduction commitments does so with policies and measures that are in accordance with its national circumstances.⁷⁰⁵

Parties in reducing their GHG emissions could accordingly do so by provisions made in Articles 6, 12 and 17 of the *Kyoto Protocol*.⁷⁰⁶ The emissions reductions as per the provisions, in addition to domestic reductions could be done by means of purchasing emission credits through the International Emissions Trading and the support of Joint Implementation projects in other developed countries so as to obtain Emission Reduction Units.⁷⁰⁷ Countries could also obtain Certified Emissions Reductions by supporting projects in developing countries through the Clean Development

⁷⁰⁰ UNFCCC 2020 https://unfccc.int/kyoto_protocol.

⁷⁰¹ Article 3(1) of *Kyoto Protocol*.

⁷⁰² Article 3(1) of *Kyoto Protocol*.

⁷⁰³ Article 3(9) of *Kyoto Protocol*.

⁷⁰⁴ Article 2(1) of the *Kyoto Protocol*.

⁷⁰⁵ Article 2(1)(a) of the *Kyoto Protocol*.

⁷⁰⁶ Kuh 2018 *Encyclopedia of the Anthropocene* 506 (Article 17 and Article 6 of the *Kyoto Protocol*).

⁷⁰⁷ Kuh 2018 *Encyclopedia of the Anthropocene* 506.

Mechanism (CDM).⁷⁰⁸ The CDM principally has two objectives, those of sustainable development and the reduction of GHG emissions.⁷⁰⁹ The CDM as defined by Article 12 of the *Kyoto Protocol* is the first international offset mechanism that allows developed countries to invest in cost-effective mitigation projects in developing countries.⁷¹⁰ Countries are encouraged through market based instruments such as the CDM to build green investment infrastructure to help them meet their emission targets in a cost effective way.⁷¹¹ Developed countries under the *Kyoto Protocol* are encouraged to take the lead by taking economy-wide absolute emission reduction targets and are also encouraged to move over time towards economy-wide emission reduction or limitation targets in the light of different national circumstances.⁷¹²

Critics of the *Kyoto Protocol* argue that it does not have an effective compliance regime, but one has to consider the inbuilt compliance mechanisms to promote compliance by the parties.⁷¹³ The elements further expand on the existing structural and institutional components and improve on the Conventions mechanisms in multiple ways.⁷¹⁴ Improvements are made by strengthening the nature of the commitments to be legally binding as earlier stated, requiring more rigorous reporting, establishing a more critical and comprehensive review process and finally mandating the development of procedures and mechanisms to address cases of non-compliance.⁷¹⁵

Generally the *Kyoto Protocol* can be viewed as having been successful because of its complexity and enormity of the issues concerned.⁷¹⁶ This is in the context of the *Protocol* being viewed as "establishing an internationally agreed normative framework and set of instruments for tackling climate change on an ongoing basis".⁷¹⁷ Even without the United States and Australia the *Protocol* established principles for

⁷⁰⁸ Kuh 2018 *Encyclopedia of the Anthropocene* 506 (Article 12 of the *Kyoto Protocol*).

⁷⁰⁹ Article 12 of the *Kyoto Protocol*.

⁷¹⁰ Gillenwater and Seres 2011 *Greenhouse Gas Measurement and Management* 4.

⁷¹¹ UNFCCC 2020 https://unfccc.int/kyoto_protocol.

⁷¹² Article 4(4) of the *Kyoto Protocol* 4.

⁷¹³ Breidenich *et al* 1998 *American JIL* 327.

⁷¹⁴ Breidenich *et al* 1998 *American JIL* 327.

⁷¹⁵ Breidenich *et al* 1998 *American JIL* 327.

⁷¹⁶ Eckersley 2007 *International Politics* 44.

⁷¹⁷ Eckersley 2007 *International Politics* 44.

the distribution of benefits and burdens that commanded widespread agreement amongst participants.⁷¹⁸ Emissions trading was introduced by the *Kyoto Protocol* which is likely to be seen as an important step towards GHG reduction.⁷¹⁹ The result has been that at the domestic level countries have introduced policies that lead to emission reduction.⁷²⁰ The detractors of the *Kyoto Protocol* state that the environmental benefits will be realised at too high a cost.⁷²¹

The direct effects of Kyoto on climate change can only be small, because climate change is a problem of a "stock" nature: what drives climate change is not the emissions, but the slow build-up of atmospheric gas concentrations over decades, or even centuries.⁷²²

The long-term goal of emissions reduction requires equitable emission reductions and this may be difficult with states facing vastly different national circumstances. Some key lessons have been learnt from the *Kyoto Protocol*, primarily that managing large groups is difficult despite the obvious benefits of universal participation. The success of any climate treaty is dependent upon the actions of a relatively few (the emitters).⁷²³ In the United States it was realised that domestic legislative support must precede executive consent and the other was that economic "leakage" strongly constrains the set of sustainable cooperative arrangements available to negotiators.⁷²⁴ The *Kyoto Protocol* undoubtedly needs some level of transformation to cater for the change in circumstances created by climate change, the impacts have been more pronounced and devastating. Financial requirements of developing countries need to be addressed through more accessible instruments than what the CDM currently has to offer. Creative incentives would answer questions of participation and compliance through a transformative and cost-efficient process.

⁷¹⁸ Eckersley 2007 *International Politics* 44.

⁷¹⁹ Philibert 2004 *Int'l Rev Environ Strat* 312.

⁷²⁰ Philibert 2004 *Int'l Rev Environ Strat* 312.

⁷²¹ Philibert 2004 *Int'l Rev Environ Strat* 312.

⁷²² Philibert 2004 *Int'l Rev Environ Strat* 312.

⁷²³ Mignone 2007 <https://www.brookings.edu/articles/international-cooperation-in-a-post-kyoto-world/>.

⁷²⁴ Mignone 2007 <https://www.brookings.edu/articles/international-cooperation-in-a-post-kyoto-world/>.

3.2.4 *Paris Agreement*

The UNFCCC and the *Kyoto Protocol* did not lead to the agreed reduction in GHG emissions. The *Paris Agreement* was adopted on 12 December 2015 at COP 21 in Paris, it has been signed by 197 countries and went into force in November 2016.⁷²⁵ The aim of the *Paris Agreement* as stated in Article 2 of the Agreement was to strengthen the global response to the threat of climate change. The *Paris Agreement* was adopted as a result of the negative impacts of climate change and the acknowledgement that climate change has been driven by human behaviour.

The *Paris Agreement* very ambitiously sought the mitigation of climate change by pursuing efforts that were fair and recognised the special needs of developing countries through its goals, the agreement aimed to strengthen the global response to the threat of climate change by:

[H]olding the increase in the global average temperatures to well below 2° C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5° C above pre-industrial levels, recognising that this would significantly reduce the risks and impacts of climate change.⁷²⁶

In driving the departure from fossil driven economies the *Paris Agreement* sought the mitigation of GHG emissions that have caused the negative impacts on the poor and vulnerable. The *Paris Agreement* in strengthening the response towards the reduction of GHG emissions required that all Parties report and share information regularly on their emissions and implementation efforts on GHG emission reductions whilst encouraging the deployment of renewable energy sources.⁷²⁷ In establishing the carbon neutral future and sustainable development each Party under Annex I was required to increase research on, and promote the development of new renewable energy forms.⁷²⁸ The (Intended) Nationally Determined Contributions formed a critical part of the *Paris Agreement* in achieving the long-term goals of emission

⁷²⁵ Also see Gilder and Swanepoel "Climate change" 753-758. The United States withdrew from the *Paris Agreement* on 4 November 2020 – UN 2015 <https://treaties.un.org/doc/Publication/CN/2019/CN.575.2019-Eng.pdf>.

⁷²⁶ Article 2 of the *Paris Agreement* 3.

⁷²⁷ Article 13(4) of the *Kyoto Protocol* 17.

⁷²⁸ Article 2(4) of the *Paris Agreement*.

reductions.⁷²⁹ Countries further agreed that each INDC would "represent progression beyond the current undertaking of that Party".⁷³⁰ Those countries that formally ratified the *Paris Agreement*, had their INDCs turned into Nationally Determined Contributions (NDCs). The INDCs that were initially submitted to COP 21 showed that they collectively represented progress compared to "business as usual", but that they were inconsistent with an emissions pathway that would offer the required decrease in global average temperature as stated in Article 2 of the *Paris Agreement*.⁷³¹ Boyd, Turner and Ward suggested shortly before the *Paris Agreement* that there was a gap between the emissions pathway that would result from current ambitions and plans and that of the required decrease in temperature to avoid climate change.⁷³² They suggested that countries should be considering opportunities "that narrow the gap between the emissions pathway that would result from current ambitions and plans, including those goals outlined by the submitted INDCs, and a pathway that is consistent with a reasonable chance of limiting the rise in global average temperature to no more than 2 degrees Celsius above pre-industrial levels".⁷³³ The efforts of countries according to the trio should:

- a) be directed at opportunities that include credible ways of achieving bigger emission reductions which can be included in INDCs and/ or achieved through partnerships (e.g. through specific decarbonisation initiatives among willing countries);
- b) importantly countries should intensify efforts to increase investment and innovation, particularly in relation to the development of cities, energy systems

⁷²⁹ Kuh 2018 *Encyclopedia of the Anthropocene* 507.

⁷³⁰ Boyd, Cranston and Ward 2015 http://climate-action.engin.umich.edu/figures/Rood_Climate_Change_AOSS480_Documents/Boyd_Turner_Ward_COP21_Paris_Emissions_2030_Implications_Grantham_2015.pdf 3.

⁷³¹ Boyd, Cranston and Ward 2015 http://climate-action.engin.umich.edu/figures/Rood_Climate_Change_AOSS480_Documents/Boyd_Turner_Ward_COP21_Paris_Emissions_2030_Implications_Grantham_2015.pdf 3.

⁷³² Boyd, Cranston and Ward 2015 http://climate-action.engin.umich.edu/figures/Rood_Climate_Change_AOSS480_Documents/Boyd_Turner_Ward_COP21_Paris_Emissions_2030_Implications_Grantham_2015.pdf 4.

⁷³³ Boyd, Cranston and Ward 2015 http://climate-action.engin.umich.edu/figures/Rood_Climate_Change_AOSS480_Documents/Boyd_Turner_Ward_COP21_Paris_Emissions_2030_Implications_Grantham_2015.pdf 4.

and land use, that could help to close the gap between intentions and the goal before and after 2030;

- c) The creation of a mechanism, to be included in the agreement emerging from COP 21, for countries to review their efforts and to find ways of ramping up the ambition of their emissions reductions by 2030 and beyond, taking into account the multiple economic benefits, including from reductions in local air pollution, resulting from measures to limit climate change risks;
- d) Concerted efforts by all countries to build strong and transparent domestic bases for the implementation of their INDCs, setting countries on a path to decarbonisation and enabling them to ramp up their ambitions; and
- e) Further efforts by countries to provide clarity and quantify uncertainties about their expected future emissions.⁷³⁴

The *Paris Agreement* presents an opportunity for greater research and deployment of renewable energy technologies encouraged by the call for the mobilisation of climate finance to be disbursed to developing countries.⁷³⁵ The International Renewable Energy Agency (IRENA) in its recent analysis shows that the world could meet 90 per cent of decarbonisation which is needed to stay within the *Paris Agreement* boundaries by accelerating the deployment of renewable energy and energy efficiency.⁷³⁶ Renewable energy has the potential of generating more electricity to mitigate against rising carbon emissions with the expectation that electricity generation will have increased by 2050.⁷³⁷

⁷³⁴ Boyd, Cranston and Ward 2015 http://climate-action.engin.umich.edu/figures/Rood_Climate_Change_AOSS480_Documents/Boyd_Turner_Ward_COP21_Paris_Emissions_2030_Implications_Grantham_2015.pdf 4.

⁷³⁵ For more on the *Paris Agreement* and criticism against it, see, for example, Blau *The Paris Agreement*; Lawrence and Reder 2019 *JEL* 511-531; Sachs 2019 *Ecology Law Quarterly* 865-909.

⁷³⁶ IRENA 2020 https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2017/Nov/IRENA_A_key_climate_solution_2017.pdf?la=en&hash=A9561C1518629886361D12EFA11A051E004C5C98.

⁷³⁷ IRENA 2020 https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2017/Nov/IRENA_A_key_climate_solution_2017.pdf?la=en&hash=A9561C1518629886361D12EFA11A051E004C5C98.

3.3 Regional climate change law regimes

The United Kingdom phrased its climate response when it was still part of the European Union (EU).⁷³⁸ The EU has been arguably the global leader in climate change issues and law, providing leadership in international climate policy by pushing for stringent international commitments and policies.⁷³⁹ The EU has historically and unsuccessfully, championed binding emission reduction targets for industrialised countries.⁷⁴⁰ It has the most comprehensive and ambitious legislative framework on climate change in place and it is transitioning to a low emissions economy aimed at climate neutrality by 2050.⁷⁴¹

Africa is the most vulnerable to climate change because of its high exposure to “multiple stresses” and low adaptive capacity.⁷⁴² Some of these stresses include the over dependence on rain fed agriculture and the general weakness of economic infrastructure.⁷⁴³ The African Union (AU) established the Committee of African Heads of State and Government on Climate Change (CAHOSCC) in 2009 which was to ensure that Africa spoke with one voice on climate change issues.⁷⁴⁴ It is therefore important to juxtapose the EU with its well-developed climate change framework and the position faced by Africa as the continent that is likely to be most affected by climate change and with the least resources and least responsibility for the impacts of climate change. The European Union Trading Scheme (EU ETS), the various African plans which include its common position will be discussed. First a discussion of the EU will follow as it is the global leader in the transition towards net-zero emissions and has committed itself to lead in global climate action, followed by a discussion of the African legal framework.

⁷³⁸ The United Kingdom left the European Union on 1 January 2020 – generally referred to as Brexit. All the details of the exit have not been finalised during the writing of this thesis – see in this regard Boffey *The Guardian*. Also see 5.4 where the United Kingdom is discussed in more detail.

⁷³⁹ Oberthür and Kelly 2008 *The International Spectator* 36.

⁷⁴⁰ Oberthür and Kelly 2008 *The International Spectator* 36.

⁷⁴¹ EC 2019 https://ec.europa.eu/clima/news/european-union-continues-lead-global-fight-against-climate-change_en.

⁷⁴² Niang *et al* “Africa” 1199-1265.

⁷⁴³ AU 2014 https://www.un.org/en/africa/osaa/pdf/au/cap_draft_aclimatestrategy_2015.pdf.

⁷⁴⁴ Jegede *The climate change regulatory framework* 240.

3.3.1 EU

The EU emits 13 per cent of total global emissions and is the third largest emitter of GHG after the United States and China.⁷⁴⁵ The European Union inaugurated a tough mitigation framework under Directive 2003/87/EC of the European Union Emissions Trading Scheme (EU ETS) which is currently in its third phase.⁷⁴⁶ Some emissions not covered by the EU ETS are covered by the individual national targets set under the Effort Sharing Decision.⁷⁴⁷ The EU ETS created a mandatory EU-wide cap-and-trade system for GHG emissions in covered sectors.⁷⁴⁸ These sectors include large-scale facilities in the power and industry sectors and the aviation sectors which collectively comprise 45 per cent of the EU's GHG emissions.⁷⁴⁹ Companies within the covered sectors must hold allowances sufficient to cover their emissions.⁷⁵⁰ An auction system allows for the distribution of allowances between organisations that need to increase their emissions as a result of unexpected or increased production.⁷⁵¹ The holder of an auctioned allowance does so under a time constraint. They are entitled to emit 1 tonne of carbon dioxide equivalent during a specified period.⁷⁵² Some allowances can be traded on the open market. It is also possible to obtain international emission credits from this market through emission-saving projects undertaken in developing countries and those projects officially recognised by the *Kyoto Protocol's* Joint Implementation or Clean Development Mechanism.⁷⁵³ Non-compliance is severely penalised by the EU ETS by means of monetary penalties.⁷⁵⁴ These penalties also apply when companies fail to hold sufficient allowance to cover emissions.⁷⁵⁵

⁷⁴⁵ CCES 2009 <https://www.c2es.org/site/assets/uploads/2009/12/european-union-climate-change-mitigation-measures.pdf>.

⁷⁴⁶ Also reference to the Directive and where to be found. Kuh 2018 *Encyclopedia of the Anthropocene* 507.

⁷⁴⁷ EEA 2020 <https://www.eea.europa.eu/themes/climate>.

⁷⁴⁸ Kuh 2018 *Encyclopedia of the Anthropocene* 507.

⁷⁴⁹ Kuh 2018 *Encyclopedia of the Anthropocene* 507.

⁷⁵⁰ Kuh 2018 *Encyclopedia of the Anthropocene* 507.

⁷⁵¹ Kuh 2018 *Encyclopedia of the Anthropocene* 507.

⁷⁵² Kuh 2018 *Encyclopedia of the Anthropocene* 507.

⁷⁵³ Kuh 2018 *Encyclopedia of the Anthropocene* 507.

⁷⁵⁴ Kuh 2018 *Encyclopedia of the Anthropocene* 507.

⁷⁵⁵ Kuh 2018 *Encyclopedia of the Anthropocene* 507.

The EU ETS strategy is augmented by the adoption of directives⁷⁵⁶ that increases the use of renewable energy, such as wind, solar, hydro and biomass, and to improve the energy efficiency of a wide range of equipment and household appliances.⁷⁵⁷ The multipronged approach of the EU is aimed at supporting development of carbon capture and storage technologies to trap and store carbon dioxide emitted by power stations and other large installations.⁷⁵⁸

The above discussed EU strategy is aimed at lessening the emissions of GHG and also aimed at transitioning the EU economy towards achieving net-zero GHG emissions by 2050, through a socially-fair transition in a cost effective manner.⁷⁵⁹ It sets a clear direction to be followed for its contribution towards meeting the objectives of the *Paris Agreement* temperature objectives in line with UN Sustainable Development Goals.⁷⁶⁰ These strategies of the EU serve as a blue print for other regions to emulate as they have resulted in the EU now becoming the global leader in the transition towards a net-zero-greenhouse gas emissions economy. Europe has gradually over the years been able to decouple GHG admissions from economic growth as a result of energy efficiency, fuel switch policies and penetration of renewables, all of which reduced emissions dramatically.⁷⁶¹ The figures tell the story of emission reduction through effective policy implementation which saw energy use being reduced between 1990 and 2016 by 2 per cent, GHG emissions reduced by 22 per cent whilst GDP grew by 54 per cent.⁷⁶² The EU views the *Paris Agreement* as a "key element for the modernisation of the European industry and economy" an opportunity that all regional bodies should adopt to drive their clean energy transitions.⁷⁶³ The EU has

⁷⁵⁶ A "cap and trade" system - A cap is set on the total amount of certain greenhouse gases that can be emitted by installations covered by the system. The cap is reduced over time so that total emissions fall. The third phase of the EU ETS runs from 2013 to 2020 and applies to power plants; a wide range of energy-intensive industrial sectors; aircraft flying between airports in the EU, Norway and Iceland; emissions of carbon dioxide (CO₂) nitrous oxide perfluorocarbons, methane, hydrofluorocarbons and sulphur hexafluoride.

⁷⁵⁷ EEA 2020 <https://www.eea.europa.eu/themes/climate>.

⁷⁵⁸ EEA 2020 <https://www.eea.europa.eu/themes/climate>.

⁷⁵⁹ Communication from the Commission.

⁷⁶⁰ Communication from the Commission 3.

⁷⁶¹ Communication from the Commission 4.

⁷⁶² Communication from the Commission 4.

⁷⁶³ Communication from the Commission 6.

set bold plans such as the Energy Union Strategy which will help achieve its energy efficiency objectives as well as the advancement of a cost-effective regulatory framework which will deliver on its GHG reduction targets and clean energy transition.⁷⁶⁴ These plans will align with the objectives of the Juncker Commission's objective of putting energy efficiency first whilst becoming global leaders in renewables.⁷⁶⁵ The EU has set ambitious targets of reducing energy efficiency by at least 32.5 per cent and to increase renewable energy to at least 32 per cent of the EU's final energy consumption by 2030.⁷⁶⁶ These targets have been approved and the proposed legislation to improve the carbon dioxide efficiency of cars, vans and trucks it is hoped will spur the transition in the transport sector.⁷⁶⁷ Norway is leading in this regard "as the global car leader thanks to huge tax breaks, low road tolls and free parking, sales of battery electric cars edged up to 48 per cent of all new car registrations, from January to the end of June, from 45 per cent in the same period of 2019 and 42 per cent in all of 2019".⁷⁶⁸

The EU undertook further steps in the promotion of GHG reduction through the adoption of the "Pathways for the Transition to a Net-Zero Greenhouse Gas Emissions economy and Strategic Priorities" plan.⁷⁶⁹ Energy is responsible for 75 per cent of emissions in the EU, and the various scenarios proposed by the EU move towards sustainable use of energy underpinned by market-based and pan European approaches.⁷⁷⁰ Eight scenarios are proposed which build upon "no regret policies" such as strong usage of renewable energy and energy efficiency.⁷⁷¹ A major benefit of renewable energy use as per the scenario planning proposes that large-scale deployment of renewables will lead to the electrification of the economy and a high degree of decentralisation of the energy grid.⁷⁷² EU leadership on renewables has

⁷⁶⁴ Communication from the Commission 6.

⁷⁶⁵ Communication from the Commission 17.

⁷⁶⁶ Communication from the Commission 5.

⁷⁶⁷ Communication from the Commission 5.

⁷⁶⁸ Doyle 2020 <https://www.climatechangenews.com/2020/07/02/norway-sets-electric-car-record-battery-autos-least-dented-covid-19-crisis/>.

⁷⁶⁹ Communication from the Commission 6.

⁷⁷⁰ Communication from the Commission 6.

⁷⁷¹ Communication from the Commission 7.

⁷⁷² Communication from the Commission 9.

already led to massive drops in prices of costs of on- and off-shore wind as well as the production of solar panels.⁷⁷³ Competitive deployment of renewables has had implications for other related industries, resulting in greater decarbonisation of sectors such as heating, transport and industry, either through the direct use of electricity or indirectly through the use of e-fuels.⁷⁷⁴

The Scenario planning is detailed and allows for variables which make them more realistic in achieving their targets and overall objectives. This shows and allows for other regional bodies to use the scenario planning to model their own plans and deploy sustainable energy programmes with the use of renewables complimented by technological and economic mechanisms to reach net-zero emissions.

The African regional context follows as a contrast to the European framework to show the difficulties that Africa is faced with in terms of climate change impacts and issues around financing mitigation strategies.

3.3.2 African regional context

The African continent contributes the least in terms of emissions which are negligible, with the exception of South Africa.⁷⁷⁵ This scenario is aggravated by "multiple stresses" that include high dependence on rain-fed agriculture, widespread poverty and weak adaptive capacity.⁷⁷⁶ Climate change "portends innumerable socio-economic and political challenges", with African leaders having been warned that the "continent stands a very marginal chance of making meaningful progress towards achievement of the Millennium Development Goals (MDGs)".⁷⁷⁷ In realisation of the dangers and inadequate structures of mitigating against climate change, the African Union (AU) Assembly took a Decision on Climate Change and Development in Africa in which it expressed grave concern on the vulnerability of Africa's socio economic

⁷⁷³ Communication from the Commission 9.

⁷⁷⁴ Communication from the Commission 9.

⁷⁷⁵ AU 2014 https://www.un.org/en/africa/osaa/pdf/au/cap_draft_auclimatestrategy_2015.pdf.

⁷⁷⁶ AU 2014 https://www.un.org/en/africa/osaa/pdf/au/cap_draft_auclimatestrategy_2015.pdf.

⁷⁷⁷ Jarso 2011 *JSDLP* 38. In the meantime, the Sustainable Development Goals were agreed upon in the place of the MDGs.

and productive systems to climate change and variability and to the continent's low mitigation and response capacities.⁷⁷⁸ Recommendations by the AU resulted in the development of a plan entitled "Climate Information for Development Needs: An Action Plan for Africa – Report and Implementation Strategy".⁷⁷⁹ Endorsement of the Plan gave rise to the AU urging Member States and Regional Economic Communities (RECs) in collaboration with the private sector, civil society and development partners to integrate climate change considerations into development strategies and programmes at national and regional levels.⁷⁸⁰ Heads of State and the Government Assembly were encouraged to integrate climate change into their respective national development programmes.⁷⁸¹ The African Union Summit which followed in 2009 adopted and decided on an African Common Position on Climate Change, based on the Algiers Declaration on Climate Change (Algiers Declaration).⁷⁸² This common decision was to be refined by the African Group of Climate Change Negotiators (AGN).⁷⁸³ African countries are represented by the AGN during international negotiations and is responsible for drafting texts and common positions for adoption during the COPs.⁷⁸⁴ The AGNs most notable success has been the inclusion of the Global Goal for Adaptation (GGA) in the *Paris Agreement* (Article 7).⁷⁸⁵ The Objective of Article 3 of the *Constitutive Act* of the African Union⁷⁸⁶ supports the common position made by African countries by stating that "the objective of the Union shall be to promote and defend African common positions on issues of interest to the continent and its peoples".⁷⁸⁷

⁷⁷⁸ AU 2007 https://au.int/sites/default/files/decisions/9556-assembly_en_29_30_january_2007_auc_the_african_union_eighth_ordinary_session.pdf.

⁷⁷⁹ AU 2007 https://au.int/sites/default/files/decisions/9556-assembly_en_29_30_january_2007_auc_the_african_union_eighth_ordinary_session.pdf.

⁷⁸⁰ AU 2007 https://au.int/sites/default/files/decisions/9556-assembly_en_29_30_january_2007_auc_the_african_union_eighth_ordinary_session.pdf.

⁷⁸¹ Jarso 2011 *JSDLP* 38.

⁷⁸² AU 2014 https://www.un.org/en/africa/osaa/pdf/au/cap_draft_aclimatestrategy_2015.pdf.

⁷⁸³ AU 2014 https://www.un.org/en/africa/osaa/pdf/au/cap_draft_aclimatestrategy_2015.pdf 2.

⁷⁸⁴ Skah 2020 https://media.africaportal.org/documents/Revisiting_international_climate_negotiations.pdf 16.

⁷⁸⁵ See para 3.2.4 above. Skah 2020 https://media.africaportal.org/documents/Revisiting_international_climate_negotiations.pdf 16.

⁷⁸⁶ *Constitutive Act* of the African Union, 2000.

⁷⁸⁷ AU *Constitutive Act* Article 3(d) 5.

The common position whilst acting as a unifying stance between AU members, is a difficult position to comprehend in the context of the continent which is not homogeneous.⁷⁸⁸ The "common interest" is hindered by many circumstances such as the fact that some countries are oil-producing, coastal states and agricultural states with unique interests concerning climate change.⁷⁸⁹ Many African countries still view themselves in relation to being Anglophone or Francophone and hence their objectives are not necessarily the same or similar. Negotiators for the African continent have often expressed the view that they are confronted with the difficulty of unifying the competing interests of a large number of countries with varying socio-economic realities and priorities.⁷⁹⁰ The former AGN Chair from Eswatini, Mr Dhlamini, best expressed the marked viewpoints when he stated that "[p]reparations were challenging due to regional diversity in development, language, culture, geography and relative vulnerability to climate change".⁷⁹¹

The comprehensive African Strategy on Climate Change⁷⁹² included the development of sector technical backup data on the impacts of climate change, its costs to the economies of Africa and the amount of carbon sequestered in various African ecosystems.⁷⁹³ The AU, aware that finance was key to implementation, requested the Commission, the Economic Commission for Africa, and the African Development Bank to develop and implement the Plan on Climate Change and Development in Africa and report on progress biennially to the AU Assembly.⁷⁹⁴

The AU Assembly in 2009, gaining momentum on climate change issues, established the Conference of African Heads of State and Government (CAHOSCC) to spearhead leadership in the climate change negotiations process. The Assembly urged the

⁷⁸⁸ Scholtz 2010 *African HRLJ* 18.

⁷⁸⁹ Scholtz 2010 *African HRLJ* 18.

⁷⁹⁰ Skah 2020 https://media.africaportal.org/documents/Revisiting_international_climate_negotiations.pdf 16.

⁷⁹¹ Skah 2020 https://media.africaportal.org/documents/Revisiting_international_climate_negotiations.pdf 16.

⁷⁹² UN 2015 https://www.un.org/en/africa/osaa/pdf/au/cap_afrclimatestrategy_2015.pdf.

⁷⁹³ AU 2014 https://www.un.org/en/africa/osaa/pdf/au/cap_draft_aclimatestrategy_2015.pdf.

⁷⁹⁴ AU 2007 https://au.int/sites/default/files/decisions/9556-assembly_en_29_30_january_2007_auc_the_african_union_eighth_ordinary_session.pdf.

CAHOSCC, all ambassadors, and negotiators to use the approved African Common Position to achieve optimal results for the continent; and authorised the AU Commission to facilitate the AU's accession to the UNFCCC, the *Kyoto Protocol*, and the CBD.⁷⁹⁵

A streamlined single negotiating structure at both the Ministerial and Expert Levels followed in 2010.⁷⁹⁶ Climate change gained prominence at the inter-ministerial level of the African Ministerial Conference of the Environment (AMCEAN).⁷⁹⁷ AMCEAN was established to provide advocacy for environmental protection in Africa, ensure that basic human needs are met adequately and in a sustainable manner, ensure that social and economic development is realised at all levels, and ensure that agricultural activities and practices meet the food security needs of the region.⁷⁹⁸ The AMCEAN has a strong regional and sub-regional focus and builds on integration of mitigation and adaptation measures into regional policies and socio-economic development, playing a prominent role in climate change issues.⁷⁹⁹ Following a Special Session on climate change which had the African Group of Negotiators in attendance, adopted the Nairobi Declaration on the African Process for Combatting Climate Change.⁸⁰⁰ It was also an opportunity for the continent through the AMCEAN to decisively respond to the threats of climate change.⁸⁰¹ The Nairobi Declaration was to serve as a unified manifestation of the continent's determination to play a pivotal role in addressing the challenges of climate change.⁸⁰² The Nairobi Declaration noted with concern the inadequacy, complexity, and fragmentation of the existing climate financing mechanisms, as well as the constraints faced by African countries in accessing these facilities. It reaffirmed the adoption (by the Assembly) of the Algiers Declaration, and "the need [for African countries] to speak with one voice in the negotiations process

⁷⁹⁵ Jarso 2011 *JSDLP* 39.

⁷⁹⁶ Jarso 2011 *JSDLP* 39.

⁷⁹⁷ Jarso 2011 *JSDLP* 39.

⁷⁹⁸ Ruppel "Climate change law and policy positions in the African Union" 411-448.

⁷⁹⁹ Ruppel "Climate change law and policy positions in the African Union" 411-448.

⁸⁰⁰ See also Jarso 2011 *JSDLP* 39; Scholtz 2010 *African HRLJ* 1-25; Kotzé and Du Plessis 2019 *JELL* 615-664.

⁸⁰¹ Petrik and Ashburner 2019 <https://openbooks.uct.ac.za/uct/catalog/book/AF18>.

⁸⁰² Petrik and Ashburner 2019 <https://openbooks.uct.ac.za/uct/catalog/book/AF18>.

for the new legally binding global climate change regime". The Nairobi Declaration further stressed that "Africa's priorities are to implement climate change programmes on adaptation ... in particular to alleviate poverty and attain the Millennium Development Goals, with emphasis on the most vulnerable groups, especially women and children;" and recognised the need "to ensure coordination and coherence in the implementation" of existing climate change adaptation and mitigation actions in Africa.⁸⁰³

Mitigation in the African context is important for two reasons; the first is that the mitigation response of the rest of the world will have an impact on Africa and secondly Africa is becoming a major emitter GHG as result of land-use change amounting for 20 per cent of total anthropogenic emissions.⁸⁰⁴ Climate change will have profound ramifications on the continent and hence the urgent need for mitigation. Technological changes are causing the energy-related innovations such as the use of electrical vehicles, the changes in prices of fuels and other goods will change the economic opportunities for Africa.⁸⁰⁵ Deforestation is becoming a major issue in the Congo basin, in particular the Democratic Republic of Congo.⁸⁰⁶ Balancing climate change impacts and the trade-offs of economic development are issues countries on the continent are grappling with, and these are often difficult choices.⁸⁰⁷

The African continent in seeking leverage to express its climate change issues has through the AGN participated in coalitions that include the Least Developed Countries (LDCs), the Arab Group, the Organisation of the Petroleum Exporting Countries (OPEC), the BASIC Countries (Brazil, South Africa, India and China), and the Alliance of Small Island States (AOSIS).⁸⁰⁸ African countries at COP 25 pressed for more funding and carbon emission cuts from major polluters and closing the gap of

⁸⁰³ Jarso 2011 *JSDLP* 39.

⁸⁰⁴ Collier, Conway and Venables 2008 *Oxford Review of Economic Policy* 348.

⁸⁰⁵ Collier, Conway and Venables 2008 *Oxford Review of Economic Policy* 348

⁸⁰⁶ Collier, Conway and Venables 2008 *Oxford Review of Economic Policy* 348.

⁸⁰⁷ Skah 2020 https://media.africaportal.org/documents/Revisiting_international_climate_negotiations.pdf 14.

⁸⁰⁸ Skah 2020 https://media.africaportal.org/documents/Revisiting_international_climate_negotiations.pdf 16.

ambition.⁸⁰⁹ Financing has not been forthcoming from developed countries and that which has trickled through international institutions has been difficult to access.⁸¹⁰ The grant-based system is the new position proposed by the AGN to avoid the increasing debt burden of developing countries.⁸¹¹

Africa needs to find financing as it has to develop its research capacities and such research needs to be tailored to data collection that improves the understanding of the interconnectedness of a warmer climate with that of the consequences of such climate.⁸¹² Partnerships need to be deepened between research institutions with the AGN so timely inputs could be based on scientific evidence in climate change negotiations.⁸¹³ Further research is required to understand the long-term effects of the expected trade-offs involved in decarbonised economies, and how they can avoid becoming locked-in to carbon-intensive economies and infrastructures.⁸¹⁴ Such research will articulate a coordinated strategy for more financial support and enable the mobilisation of resources for climate resilient and low-carbon initiatives required for implementation by member states.⁸¹⁵ Integrated approaches should be boosted as part of the overall strategy by the continent on responding to climate change.⁸¹⁶ The AU Commission could mobilise financial resources within its member states to

⁸⁰⁹ Gahouma-Bekale <https://www.climatechangenews.com/2020/02/29/african-countries-need-rich-nations-take-lead-ambition-cop26/>.

⁸¹⁰ Skah 2020 https://media.africaportal.org/documents/Revisiting_international_climate_negotiations.pdf 19.

⁸¹¹ Skah 2020 https://media.africaportal.org/documents/Revisiting_international_climate_negotiations.pdf 19.

⁸¹² Skah 2020 https://media.africaportal.org/documents/Revisiting_international_climate_negotiations.pdf 20.

⁸¹³ Skah 2020 https://media.africaportal.org/documents/Revisiting_international_climate_negotiations.pdf 20.

⁸¹⁴ Skah 2020 https://media.africaportal.org/documents/Revisiting_international_climate_negotiations.pdf 20.

⁸¹⁵ Skah 2020 https://media.africaportal.org/documents/Revisiting_international_climate_negotiations.pdf 20.

⁸¹⁶ Skah 2020 https://media.africaportal.org/documents/Revisiting_international_climate_negotiations.pdf 20.

strengthen the continent's response to climate related risks.⁸¹⁷ One of the ways that it could do so, is by way of introducing climate finance.⁸¹⁸

3.4 Climate finance

Climate finance is discussed in this chapter from an international law discourse perspective and its link with climate change mitigation. Climate finance at the international law level evolves through the UNFCCC's recognition that Annex I countries would need to provide financial resources to assist developing countries transition towards a low carbon footprint. This was one of the most contentious issues during the negotiations of the UNFCCC when:

[D]eveloping countries advocated establishing a new fund, while developed countries wished to use the Global Environment Facility (GEF), a joint project of the World Bank, UNEP, and UNDP that was established in 1991. Developing countries, led by India, sought to include a commitment that developed countries provide 'new and additional' financial resources to help developing countries implement the Convention – that is, money over and above existing aid flows.⁸¹⁹

Climate finance should be seen in the context of supporting climate change policies and building resilience against the threats of climate change.⁸²⁰ The genesis of the term climate finance starts in 1994 when developing countries demanded that increased funding be provided by developed countries for the implementation of mitigation and adaption actions.⁸²¹ The design and origin of the finance component were formed by previous Multilateral Environmental Agreements (MEAs) with special emphasis on the 1987 *Montreal Protocol on Substances that Deplete the Ozone Layer*.⁸²² Climate finance's primary aim was to assist many developing nations confront climate change through mitigation and adaption strategies. Article 11.2 of the *Kyoto Protocol* provided the impetus for the Parties to create a mechanism that would allow developed countries to support the financial requirements of developing

⁸¹⁷ Skah 2020 https://media.africaportal.org/documents/Revisiting_international_climate_negotiations.pdf 20.

⁸¹⁸ See para 3.4 above.

⁸¹⁹ Bodansky "The history of the global climate change regime" 33.

⁸²⁰ Romano *et al Climate Finance* 28.

⁸²¹ Gichira, Agwata and Muigua 2014 *JL Pol'y & Globalization* 7.

⁸²² Gichira, Agwata and Muigua 2014 *JL Pol'y & Globalization* 7.

countries in implementing projects that would address climate change impacts.⁸²³ Provisions for technology transfer and capacity building would be financed by this mechanism in the form of a fund which would assist developing countries meet effective mitigation and adaptation actions.⁸²⁴

The UNFCCC defines "climate finance" as:

National or transnational financing drawn from public, private and alternative sources of financing-that seeks to support mitigation and adaptation actions that will address climate change.⁸²⁵

The IPCC acknowledges that there is no agreed upon definition on climate finance but goes on to broadly define climate finance as "(f)inancial resources devoted to addressing climate change globally and financial flows to developing countries to assist them in addressing climate change."⁸²⁶

The UNFCCC 2018 Technical Report confirms the definition of climate finance as per the earlier 2014 and 2016 Biennial Assessment and Overview of Climate Finance Flows Technical Reports. In terms of the *Paris Agreement* Article 2.1(c) refers to finance flows that are "consistent with", rather than aimed at, a pathway towards low-GHG and climate-resilient development.⁸²⁷ Another definition often used by the UNFCCC of climate finance flow is defined in reference to "climate-related financial flows within or between countries that are dedicated to both mitigation and adaptation".⁸²⁸

From the above it can be deduced that climate finance includes the total flows of all finance directed towards low carbon and resilient infrastructure that provide

⁸²³ Gichira, Agwata and Muigua 2014 *JL Pol'y & Globalization* 2.

⁸²⁴ In the next paragraph climate finance international agreements will be referred to, to provide an understanding of climate finance flows. See also Gichira, Agwata and Muigua 2014 *JL Pol'y & Globalization* 2.

⁸²⁵ UNFCCC 2019 <https://unfccc.int/topics/climate-finance/the-big-picture/introduction-to-climate-finance>.

⁸²⁶ IPCC 2014 <https://www.ipcc.ch/report/ar5/> 117-130.

⁸²⁷ UNFCCC 2019 <https://unfccc.int/sites/default/files/resource/2018%20BA%20Technical%20Report%20Final%20Feb%202019.pdf>.

⁸²⁸ Markandya, Galarraga and Rübbelke *Climate Finance* 12.

mitigation and adaptation strategies for renewable energy implementation and the protection of the environment. Several categories of climate finance and climate finance flow are provided namely incremental costs, incremental investment, total climate finance, total climate finance flowing to developing countries, public climate finance flowing to developing countries, and public climate finance flowing to developing countries.⁸²⁹ Incremental costs are the costs of the incremental investment and the change of operating maintenance costs for a mitigation or adaptation project in comparison to a reference project. It can be calculated as the difference of the net present values of the two projects.⁸³⁰ Incremental investments are the extra capital required for the initial investment for a mitigation or adaptation project to a reference project.⁸³¹ Total climate finance refers to all financial flows. The expected effect is to reduce net GHG emissions or to enhance resilience to the impacts of climate variability and the projected climate change. This covers private and public funds, domestic and international flows and expenditures for mitigation and adaptation to current climate variability as well as future climate change.⁸³² Total climate finance flowing to developing countries is the amount of the total climate finance invested in developing countries that comes from developed countries. This covers private and public funds.⁸³³ Private climate finance flowing co-developing countries includes finance and investment by private actors in/from developed countries for mitigation and adaptation activities in developing countries.⁸³⁴ Public climate finance flowing to developing countries is provided by developed countries' governments and bilateral institutions as well as by multilateral institutions for mitigation and adaptation activities in developing countries. Most of the funds provided are concessional loans and grants.⁸³⁵

Climate finance has caused a significant amount of debate amongst those in the field with varying viewpoints being pronounced. Amongst these views are that climate

⁸²⁹ IPCC 2014 <https://www.ipcc.ch/report/ar5/> 117-130.

⁸³⁰ IPCC 2014 <https://www.ipcc.ch/report/ar5/> 117-130.

⁸³¹ IPCC 2014 <https://www.ipcc.ch/report/ar5/> 117-130.

⁸³² IPCC 2014 <https://www.ipcc.ch/report/ar5/> 117-130.

⁸³³ IPCC 2014 <https://www.ipcc.ch/report/ar5/> 117-130.

⁸³⁴ IPCC 2014 <https://www.ipcc.ch/report/ar5/> 117-130.

⁸³⁵ IPCC 2014 <https://www.ipcc.ch/report/ar5/> 117-130.

finance is a subset of the colloquially referred to term "green finance", distinguishing itself as a mitigation and adaptation form of finance.⁸³⁶ At the core of climate finance is its focus on public finance whilst being able to leverage the larger capital amounts of private finance.⁸³⁷ Historically climate finance was used to finance riskier projects or technical assistance activities as a result of limited interest from the private sector because of uncertain revenue streams.⁸³⁸ Governments would as a consequence therefore disburse climate finance in the form of grants or concessional loans for riskier projects.⁸³⁹ The exponential growth of the green bond market, however, and climate finance specifically, has seen an upsurge in corporate involvement. This has resulted in another definition of climate finance being put into the fray which states:

Climate finance is a sub-set of green finance and refers to investments specifically in climate change mitigation and adaptation activities, which primarily involve public finance and the leveraging of private finance.⁸⁴⁰

Academics, such as Glemarec, Van Melle, Höhne and Ward have generally defined "climate finance" as climatic related financial flows within or between countries that are dedicated to both mitigation and adaptation.⁸⁴¹ Experts within the climate finance arena generally agree that climate finance is continually evolving and is captured by the following facets:

- Financial support for mitigation and adaptation activities, including capacity-building and Research and Development (R and D), as well as broader efforts to enable the transition towards low-carbon, climate-resilient development.
- Financial flows from developed to developing countries (North-South).
- Financial flows from developing to developing countries (South-South).
- Financial flows from developed to developed countries (North-North).
- Domestic climate finance flows in developed and developing countries.

⁸³⁶ Warren 2019 *Climate Policy* 861-877.

⁸³⁷ Warren 2019 *Climate Policy* 861-877.

⁸³⁸ Warren 2019 *Climate Policy* 861-877.

⁸³⁹ Warren 2019 *Climate Policy* 861-877.

⁸⁴⁰ Warren 2019 *Climate Policy* 861-877. Also see Falconer and Stadelmann 2014 *Climate Policy Initiative* 1; Markandya, Galarraga and Rübbelke *Climate Finance* 12.

⁸⁴¹ Markandya, Galarraga and Rübbelke *Climate Finance* 12.

- Public, private and public-private flows.
- Incremental cost and investment capital: an outstanding of the incremental cost can help identify where flows come from, while ultimately it is the investment cost that forms the greatest portion of expenditures, and
- Gross flows and net flows that shed light on the level of mobilised international investments and the net contribution of countries.⁸⁴²

At the 15th Conference of the Parties (COP15) later to be known as the Copenhagen Accord in 2009, developed countries in an unprecedented move committed to provide "new and additional" resources in the form of "Fast-start Finance" of US\$ 30 billion between 2010-2012.⁸⁴³ This was to include forestry investments through international institutions to the value of US\$ 30 billion for the same period with "balanced allocation between adaptation and mitigation".⁸⁴⁴ Additionally they agreed to a goal of mobilising jointly US\$ 100 billion a year by 2020 to address the needs of developing countries "from a wide variety of sources, public and private bilateral and multilateral, including alternative sources of finance in the context of meaningful mitigation actions and transparency on implementation".⁸⁴⁵

The Copenhagen Accord commitment, also named the Long-term Finance commitment, was seen as the start of climate finance.⁸⁴⁶ A new Green Climate Fund (GCF) was set up as the operational entity of the financial mechanism. Affirmation of the commitments made in Copenhagen were made at COP 16 in Cancun. In Durban 2011 at COP 17 the decision to operationalise the GCF, part of the Durban Platform for Enhanced Action,⁸⁴⁷ was taken and in Paris 2015, at COP 21 the developed nations once again pledged to finance "US\$100 billion a year for the dissemination of low-carbon technologies; the implementation of a reimbursement mechanism for damage from global warming to the most exposed countries, was also planned".⁸⁴⁸ An

⁸⁴² Buchner *et al* 2011 *Climate Policy Initiative* 2.

⁸⁴³ Markandya, Galarraga and Rübbelke *Climate Finance* 13.

⁸⁴⁴ Haites 2011 *Climate Policy* 963-969.

⁸⁴⁵ Haites 2011 *Climate Policy* 963-969.

⁸⁴⁶ Romano *et al* *Climate Finance* 26.

⁸⁴⁷ Romani and Stern 2011 *Grantham Institute London* 5.

⁸⁴⁸ Romani and Stern 2011 *Grantham Institute London* 26.

extension from the previously agreed 2020 target to 2025 was made in Paris when countries agreed collectively to set a new goal above the US\$ 100 billion probably acknowledging that more upscaling would be required.⁸⁴⁹ This funding would come from "a wide variety of sources, public and private, bilateral and multilateral, including alternative sources of finance".⁸⁵⁰ "A new and quantified goal" was to be stipulated which was that it would not undercut the 2010 commitment to provide the US\$ 100 billion annually.⁸⁵¹ This is an important aspect of climate finance seen by many as a political benchmark.⁸⁵² The *Paris Agreement* was important in terms of climate finance for several reasons, key of which was to make "finance flows consistent with a pathway towards low greenhouse emissions and climate resilient development" - this is contained in Article 2.1 (c) of the UNFCCC.⁸⁵³

The main contestation at Copenhagen COP 15, was that in the Accord, funds were to be designated "part public and part private" with the funding for the transformation process principally funded by the private sector.⁸⁵⁴ This was such a sticking point that without the phrase "public and private" there would not have been a Copenhagen Accord and subsequently no Cancun Agreement. As stated before, the *Paris Agreement* made a clarion call for financial assistance from developed Parties to channel funding to Parties less endowed and more vulnerable to alleviate the impacts of climate change.⁸⁵⁵

Climate finance principally is sourced from capital markets or government budgets, and then channelled through the multiple multilateral or bilateral agencies such as the UNFCCC and other private financial institutions.⁸⁵⁶ The vast amounts of climate

⁸⁴⁹ Weikmans and Roberts 2019 *Climate and Development* 1.

⁸⁵⁰ LSE 2018 <http://www.lse.ac.uk/GranthamInstitute/faqs/what-is-climate-finance-and-where-will-it-come-from/>.

⁸⁵¹ Markandya, Galarraga and Rübbelke *Climate Finance* 1.

⁸⁵² Bodnar, Brown and Nakhooda 2015 <https://climatepolicyinitiative.org/wp-content/uploads/2015/08/What-Counts-Tools-to-Help-Define-and-Understand-Progress-Towards-the-100-Billion-Climate-Finance-Commitment.pdf>.

⁸⁵³ Warren 2019 *Climate Policy* 861-877.

⁸⁵⁴ Romani and Stern 2011 *Grantham Institute London* 4.

⁸⁵⁵ UNFCCC 2019 <https://unfccc.int/topics/climate-finance/the-big-picture/introduction-to-climate-finance>.

⁸⁵⁶ Glemarec and Connelly *Catalysing climate finance* 62.

finance, in excess of 90 per cent, is sourced from private markets through the various financial mechanisms such as venture capital and asset financing.⁸⁵⁷ There can be no over emphasis of the critical role of public financing in attracting investment and removing some of the barriers to climate technologies.⁸⁵⁸ The capitalisation of the various funds set up under the UNFCCC have been arduous in part because historically developed countries relied on official development assistance (ODA) budgets for the provision of climate finance to developing countries.⁸⁵⁹ The preference was to channel funds through bilateral institutions rather than multilateral funds such as the Global Climate Change Initiative (GCCII).⁸⁶⁰

The Global Environment Facility (GEF) was established "over concern of growing global environmental problems that transcend national borders" and was endorsed as the principal funding mechanism for global environment protection.⁸⁶¹ Earlier in its history the GEF had initially been established as an experimental fund to provide funding for global environmental improvements in the four focal areas of climate change, biodiversity, ozone depletion, and pollution of international waters.⁸⁶² These focal areas have been expanded to now include Persistent Organic Pollutants and land degradation.⁸⁶³ Some European countries already saw the GEF as having the potential to "grow into a more mature instrument for addressing global problems".⁸⁶⁴ The GEF was exceptional in that global environmental issues were for the first time being viewed from a financial paradigm and that developing countries should not divert their resources for economic growth but rather that the fund be viewed as additional development assistance.⁸⁶⁵

⁸⁵⁷ Glemarec and Connelly *Catalysing climate finance* 62.

⁸⁵⁸ Glemarec and Connelly *Catalysing climate finance* 62.

⁸⁵⁹ Glemarec and Connelly *Catalysing climate finance* 62.

⁸⁶⁰ Watson, Bird and Schalatek 2019 <https://www.odi.org/publications/5157-climate-finance-fundamentals> 2.

⁸⁶¹ El-Ashry 1996 *Brown Journal of World Affairs* 269-274.

⁸⁶² El-Ashry 1996 *Brown Journal of World Affairs* 269-274.

⁸⁶³ GEF 2007 https://www.thegef.org/sites/default/files/documents/GEF4-Focal-Area_strategy.pdf 4.

⁸⁶⁴ El-Ashry 1996 *Brown Journal of World Affairs* 269-274.

⁸⁶⁵ GEF 2016 <https://www.thegef.org/news/25-years-gef> 11.

The GEF has transitioned into a role of facilitator and funding mechanism for integrating global environmental concerns into the development process.⁸⁶⁶ The GEF has major contributing partners (which are also its implementing agencies) in the form of the World Bank, United Nations Development Programme (UNDP) and the United Nations Environment Programme (UNEP).⁸⁶⁷ The unique "operational strategy" (based on cost effectiveness) of the GEF allows it to give effect to the policy guidance and program priorities of the Conferences of the Parties to the Climate Change and Biodiversity Conventions.⁸⁶⁸ Development and sustainability are no longer inseparable and the GEF has realised this by ensuring that global concerns about the environment are incorporated into national sustainable development plans.⁸⁶⁹ The GEF also manages two special funds which are the Special Climate Change Fund (SCCF) and the Least Developed Countries Fund (LDCF).⁸⁷⁰ These funds have special unique features aligned to their purposes. The SCCF finances projects relating to "adaptation, technology transfer, and capacity building, as well as sectors such as energy, transport, industry, agriculture, forestry and waste management", while the LDCF helps developing countries prepare and implement their National Adaptation Programmes of Action (NAPAs).⁸⁷¹ Finance will be critical to global environmental sustainability and the GEF represents this step towards the effective implementation of the climate change and biodiversity conventions.⁸⁷²

GEF and the World Bank are working closely to accelerate the transition to a low carbon economy. In this regard, part of GEF's strategic objective is the promotion of on-grid renewable energy.⁸⁷³ This strategy involves the increase of biomass energy use in countries' energy mixes as a response to both the challenges of climate change

⁸⁶⁶ El-Ashry 1996 *Brown Journal of World Affairs* 269-274.

⁸⁶⁷ El-Ashry 1996 *Brown Journal of World Affairs* 269-274.

⁸⁶⁸ El-Ashry 1996 *Brown Journal of World Affairs* 269-274.

⁸⁶⁹ El-Ashry 1996 *Brown Journal of World Affairs* 269-274.

⁸⁷⁰ Glemarec and Connelly *Catalysing climate finance* 69.

⁸⁷¹ Glemarec and Connelly *Catalysing climate finance* 69.

⁸⁷² El-Ashry 1996 *Brown Journal of World Affairs* 269-274.

⁸⁷³ GEF 2007 https://www.thegef.org/sites/default/files/documents/GEF4-Focal-Area_strategy.pdf 4.

and the unstable petroleum prices.⁸⁷⁴ Rural energy will be promoted by GEF through use of renewable energy in rural communities and investment in energy efficiency.⁸⁷⁵

The Green Climate Fund (GCF) was established as part of the Cancún Agreements of COP 16 in Mexico 2010.⁸⁷⁶ It was conceptualised as a fund in Copenhagen with the intention of being a multilateral financing mechanism to support climate action funded by pledges of US\$ 100 billion in long term finance by 2020.⁸⁷⁷ Adaptation which is grossly underfunded globally was to be funded by funds channelled through the GCF.⁸⁷⁸ As an operating entity of the financial mechanism of the Convention under Article 11, "it is accountable to and functions under the guidance of the COP".⁸⁷⁹ The GCF has objectives and guiding principles, which state its intention as supporting "a paradigm shift towards low-emission and climate-resilient development pathways by providing support to developing countries to limit or reduce their greenhouse gas emissions and to adapt to the impacts of climate change".⁸⁸⁰ The governing instrument recognised early on that GCF actions would need to promote "environmental, social, economic and development co-benefits and [to take] a gender sensitive approach" in all climate actions.⁸⁸¹ The GCF is an integral component of the GHG mitigation strategies of the *Paris Agreement* finance architecture and forms the flagship channel for climate finance disbursements.⁸⁸² A significant gap however still exists between available finance and the US\$ 100 billion target as well as holding developed nations to account to make those contributions.

Multilateral climate funds provided by multilateral institutions such as multilateral development banks, United Nations (UN) agencies, and the financial institutions that

⁸⁷⁴ GEF 2007 https://www.thegef.org/sites/default/files/documents/GEF4-Focal-Area_strategy.pdf 104.

⁸⁷⁵ GEF 2007 https://www.thegef.org/sites/default/files/documents/GEF4-Focal-Area_strategy.pdf 7.

⁸⁷⁶ UNFCCC 2010 Decision 1/CP16, paras 100 and 102; UNFCCC 2019 <https://unfccc.int/topics/climate-finance/the-big-picture/introduction-to-climate-finance>.

⁸⁷⁷ Schalatek, Nakhooda and Watson "The green climate fund" 1.

⁸⁷⁸ Schalatek, Nakhooda and Watson "The green climate fund" 1.

⁸⁷⁹ Schalatek, Nakhooda and Watson "The green climate fund" 1.

⁸⁸⁰ Schalatek, Nakhooda and Watson "The green climate fund" 2.

⁸⁸¹ Schalatek, Nakhooda and Watson "The green climate fund" 2.

⁸⁸² Hirsch 2018 <https://reliefweb.int/sites/reliefweb.int/files/resources/ENGLISH-quick-guide-climate-finance.pdf> 10.

have been created within the framework of the UNFCCC.⁸⁸³ Some of these funds which are linked to the UNFCCC are the Adaptation Fund (AF), Least Developed Countries Fund (LDCF), Special Climate Change Fund (SCCF), Green Climate Fund (GCF) and some non-UNFCCC linked institutions such as the United Nations Program on Reducing Emissions from Forest Degradation (UN REDD Program).⁸⁸⁴ The World Bank also provides multilateral climate finance through the Global Partnership for Social Accountability (GPSA), Small Grant Program (SGP) of the Global Environmental Facility (GEF), Climate Investment Funds (CIF), Asian Development Fund (ADF), ASEAN Infrastructure Fund (AIF), Asia Pacific Carbon Fund (APCF), Asia-Pacific Climate Finance Fund (APClIFF), Clean Energy Financing Partnership Facility (CEFPF), Climate Change Fund (CCF), African Climate Change Fund (ACCF) and the Green Bond Program, amongst several global funds.⁸⁸⁵ Many developing countries have now aligned their climate change programmes to receive climate change funds from the various multilateral funds by bringing into line donor interests with national priorities.⁸⁸⁶

Multilateral climate finance is generally much more transparent than that of bilateral climate finance origin.⁸⁸⁷ The rapid proliferation of climate finance mechanisms has seen a challenge in coordinating and accessing the finance.⁸⁸⁸ Despite all the challenges, it is now generally accepted that whilst it may be difficult to quantify the amounts disbursed through the various funds, there is a great potential for the promotion of economic growth and reduction of environmental degradation through the use of green electricity generation as encouraged in the building of renewable energy by these funds.⁸⁸⁹

⁸⁸³ Hirsch 2018 <https://reliefweb.int/sites/reliefweb.int/files/resources/ENGLISH-quick-guide-climate-finance.pdf>.

⁸⁸⁴ Hirsch 2018 <https://reliefweb.int/sites/reliefweb.int/files/resources/ENGLISH-quick-guide-climate-finance.pdf>.

⁸⁸⁵ Hirsch 2018 <https://reliefweb.int/sites/reliefweb.int/files/resources/ENGLISH-quick-guide-climate-finance.pdf>.

⁸⁸⁶ Hirsch 2018 <https://reliefweb.int/sites/reliefweb.int/files/resources/ENGLISH-quick-guide-climate-finance.pdf>.

⁸⁸⁷ Romano *et al Climate Finance* 29.

⁸⁸⁸ Romano *et al Climate Finance* 29.

⁸⁸⁹ Romano *et al Climate Finance* 29.

Climate finance within the multilateral disbursement system is acutely faced with issues of inequitable regional distribution in availability and use, with the bulk of funds going to Organisation for Economic Co-operation and Development (OECD) countries and a few large emerging economies such as India, China and Brazil.⁸⁹⁰ This is clearly not a sustainable trajectory as this could lead to severe economic, social, political, financial and climate change implications.⁸⁹¹ Public policy and financing instruments need to be identified and made to work in tandem so as to provide the scale necessary to adequately deal with the magnitude of climate change.⁸⁹² A strategic approach is necessary for the alignment of climate change needs with the scarce climate finance resources available so that developing countries can create greater capacity by alignment of conditions that allow capital markets and private investment to address urgent climate change issues.⁸⁹³ These funds could leverage the much greater private funds that are disbursed through the various bilateral instruments and organisations.⁸⁹⁴

Article 11.5 of the UNFCCC provides for developed countries to provide developing country Parties with financial resources through bilateral, regional and other multilateral channels.⁸⁹⁵ Bilateral sources of funding do not always come from a single source country but may in practice be connected to a group of countries.⁸⁹⁶ It is often administered by existing development agencies which are frequently not consistent with their reporting on such funds.⁸⁹⁷ Issues that often cause tensions between donor and recipient countries are as a result of "self-classifying and self-reporting climate relevant financial flows without a common reporting format or independent verification".⁸⁹⁸ Private finance is almost three times larger than that of public finance,

⁸⁹⁰ Glemarec and Connelly *Catalysing climate finance* 136.

⁸⁹¹ Glemarec and Connelly *Catalysing climate finance* 136.

⁸⁹² Glemarec and Connelly *Catalysing climate finance* 136.

⁸⁹³ Glemarec and Connelly *Catalysing climate finance* 136.

⁸⁹⁴ Glemarec and Connelly *Catalysing climate finance* 136.

⁸⁹⁵ Glemarec and Connelly *Catalysing climate finance* 62.

⁸⁹⁶ Glemarec and Connelly *Catalysing climate finance* 67.

⁸⁹⁷ Watson, Bird and Schalatek 2019 <https://www.odi.org/publications/5157-climate-finance-fundamentals> 4.

⁸⁹⁸ Watson, Bird and Schalatek 2019 <https://www.odi.org/publications/5157-climate-finance-fundamentals> 4.

this puts emphasis on the role of capital markets and if contextualised in terms of the trillions required for climate change mitigation and adaption, countries need well developed capital markets to attract investment.⁸⁹⁹ Growth of capital markets in developing countries is imperative if the investment into sustainable sources of energy are to be achieved. This provides context for why green bonds are and would be an effective instrument for climate finance. Green bonds can effectively attract the much-needed investment into renewable energy sources thus growing the capital markets in developing countries. Large institutional investors have two main benefits of green bonds amongst many others, firstly they assist with corporate branding which sends a strong signal to the market on commitments to climate change and secondly, they attract new investors by tapping into a wider base of investors.⁹⁰⁰ Many funds are guided and informed by this approach.⁹⁰¹ More on this in chapter 4 when foreign jurisdictions will be discussed.

3.5 Environmental Social Governance

ESG has become a critical non-financial tool utilised by investors in their decision making as identifying risk to/on investments. The growth of ESG metrics used has become important for disclosure by companies in their reporting to shareholders. ESG will be discussed as a key driver of environmental responsibility in the energy sector as well as providing some standards that have been adopted internationally and by some progressive companies.

The United Nations Principles for Responsible Investing (UN PRI) was introduced in 2005 by the Secretary General of the United Nations, Kofi Annan when the world's

⁸⁹⁹ Watson, Bird and Schalatek 2019 <https://www.odi.org/publications/5157-climate-finance-fundamentals> 4.

⁹⁰⁰ IFC 2018 <https://www.ifc.org/wps/wcm/connect/9e8a7c68-5bec-40d1-8bb4-a0212fa4bfab/Amundi-IFC-Research-Paper-2018.pdf?MOD=AJPERES> 9.

⁹⁰¹ Watson, Bird and Schalatek 2019 <https://www.odi.org/publications/5157-climate-finance-fundamentals> 2. Some of the more notable funds amongst the many Bilateral Funds are the Global Climate Change Initiative (GCCII) (United States), Global Climate Partnership Fund (GCPF) (Germany, UK and Denmark), International Climate Fund (ICF) (UK), International Climate Initiative (IKI) (Germany), Nama Appropriate Mitigation Action facility (NAMA facility) (UK and Germany), International Climate Forest Initiative (NCIFI) (Norway) and the REDD Early Movers (REM) (Germany and UK).

largest institutional investors were invited to join a process for the development of the Principles for Responsible Investing (UN PRI).⁹⁰² This culminated in the launch of the Principles in April 2006 at the New York Stock Exchange.⁹⁰³ The UN PRI has set the *de facto* standards and link with ESG when taking into account main-stream investment practices. According to the UN PRI

The six Principles for Responsible Investment are a voluntary and aspirational set of investment principles that offer a menu of possible actions for incorporating ESG issues into investment practice.⁹⁰⁴

The Principles as per the UN PRI are:

1. We will incorporate ESG issues into investment analysis and decision-making process;
2. We will be active owners and incorporate ESG issues into our ownership policies and practices;
3. We will seek appropriate disclosure on ESG issues by the entities in which we invest;
4. We will promote acceptance and implementation of the Principles within the investment industry;
5. We will work together to enhance our effectiveness in implementing the Principles; and
6. We will each report on our activities and progress towards implementing the Principles.⁹⁰⁵

The aim of ESG investing is to improve the investment portfolio's performance whilst taking a broader view of ESG issues that are material to the investment decision and how such decisions affect performance in the long-term.⁹⁰⁶ ESG factors in issues that would not traditionally have been factored into the investment decisions and are difficult to measure in monetary value.⁹⁰⁷ Fiduciaries within long-term investment institutions should make considerations of ESG approaches to investing.⁹⁰⁸ The PRI

⁹⁰² UN PRI 2020 <https://www.unpri.org/pri/about-the-pri>.

⁹⁰³ UN PRI 2020 <https://www.unpri.org/pri/about-the-pri>.

⁹⁰⁴ UN PRI 2020 <https://www.unpri.org/pri/about-the-pri>.

⁹⁰⁵ UN PRI 2020 <https://www.unpri.org/pri/about-the-pri>.

⁹⁰⁶ Caplan, Griswold and Jarvis 2013 <https://eric.ed.gov/?id=ED559300> 2.

⁹⁰⁷ CFA Institute 2015 <https://www.cfainstitute.org/-/media/documents/article/position-paper/esg-issues-in-investing-a-guide-for-investment-professionals.ashx>.

⁹⁰⁸ Caplan, Griswold and Jarvis 2013 <https://eric.ed.gov/?id=ED559300> 2.

approach to investment is one in which investment decisions are not based on precluding companies with environmental, social and governance records that are deviant but rather that investors should take ESG factors into consideration to the extent that they are material to the investment portfolio of a particular portfolio.⁹⁰⁹

The UN PRI principles provide acceleration towards the transition to sustainability and climate neutrality.⁹¹⁰ Over 2000 signatories to the UN PRI Principles representing in excess of US\$ 80 trillion in investment dollars under management have signed the Principles.⁹¹¹ ESG is now a critical component of decision making and this is seen in various studies such as that conducted by MIT in which:

... two-thirds of companies view sustainability as a necessary component to being competitive in today's marketplace, and a third believe that their sustainability activities are contributing to their corporations' profitability.⁹¹²

The main drivers of ESG integration into investment decision making internationally has been as a result of three factors, firstly in the United States policy directives such as the 2015 US Department of Labour ruling on ESG in the *Employee Retirement Income Security Act* (ERISA) has reduced the earlier constraints on pension funds looking to incorporate ESG issues in their process.⁹¹³ The EU in addition now requires Non-Financial Reporting Directives which obligate six thousand companies to report ESG information on an annual basis.⁹¹⁴ This is now understood to mean that ESG issues may be material to the decision process and "these issues are not merely collateral considerations or tie-breakers, but rather are proper components of the fiduciary's primary analysis of the economic merits of competing investment choices".⁹¹⁵

⁹⁰⁹ Caplan, Griswold and Jarvis 2013 <https://eric.ed.gov/?id=ED559300> 2.

⁹¹⁰ Maltais and Nykvist 2020 *J Sustain Finance Invest* 3.

⁹¹¹ UN PRI 2020 <https://www.unpri.org/pri/about-the-pri>.

⁹¹² Fulton, Kahn and Sharples 2012 file:///C:/Users/p10180869/Downloads/SSRN-id2222740.pdf 25.

⁹¹³ Eccles, Kastropeli and Potter 2017 *J Appl Corp Finance* 125.

⁹¹⁴ Eccles, Kastropeli and Potter 2017 *J Appl Corp Finance* 125.

⁹¹⁵ Eccles, Kastropeli and Potter 2017 *J Appl Corp Finance* 125.

Secondly, the positive relationship between ESG factors and corporate financial performance has been shown to improve financial returns for companies.⁹¹⁶ Thirdly, "the investment industry has established standards for ESG performance, measurement, and reporting supported by the formation of the Sustainability Accounting Standards Board (SASB) in 2011 and the International Integrated Reporting Council (IIRC) in 2010".⁹¹⁷ The Sustainability Accounting Standards Board in its mission statement "sets industry-specific standards for corporate sustainability disclosure, with a view towards ensuring that disclosure is material, and decision-useful for investors".⁹¹⁸

Organisations that early on integrated ESG metrics into their value proposition make that organisation less vulnerable to reputational, political and regulatory risk.⁹¹⁹ This may bolster an organisation in avoiding the volatility of the markets and protecting it from cash flow and profitability uncertainties.⁹²⁰ ESG issues are much more than a metric for share price value, they provide a much longer view of the organisation. Most research on ESG has been primarily focused on the "G" aspect rather than all three simultaneously.⁹²¹ It has been shown in research that ESG matters are increasingly interconnected and the PRI states that "the investment process is dynamic and ESG issues can affect the performance of investment portfolios (to varying degrees across companies, sectors, regions, asset class and through time)".⁹²² Galbreath proposes that there should be a broader focus than that between ESG and company performance from a share value position and perspective as this potentially undermines the ethical and moral considerations.⁹²³ Not all investments may immediately provide the "financial payoff" nor a "business case" for the organisation but when contextualised from the various components of the ESG term,

⁹¹⁶ Eccles, Ioannou and Serafeim 2014 *Management Science* 126.

⁹¹⁷ Eccles, Kastrapeli and Potter 2017 *J Appl Corp Finance* 126.

⁹¹⁸ SASB 2020 <https://www.sasb.org>

⁹¹⁹ Kumar *et al* 2016 *JSFI* 292-300.

⁹²⁰ Kumar *et al* 2016 *JSFI* 292-300.

⁹²¹ Galbreath 2013 *JBE* 529-541.

⁹²² UN PRI 2020 <https://www.unpri.org/pri/an-introduction-to-responsible-investment/what-are-the-principles-for-responsible-investment>.

⁹²³ Galbreath 2013 *JBE* 529-541.

can provide benefits not proximately available but nevertheless be of immeasurable value.⁹²⁴

ESG has growingly been reported as a non-financial metric in addition to the financial reporting done by companies. There is a fairly large variance in the reporting of ESG because of a lack of regulatory guidelines.⁹²⁵ A regulatory framework potentially provides for standardisation across jurisdictions enhancing compatibility across investment decision making. Investors provide noteworthy reasons for ESG investing, adopted two strategies: the use of exclusionary screening or values-based exclusions and the use of best-in-class selection.⁹²⁶ Investors have identified ESG investing as "fostering a long-term mindset", "cultivating better investment practices" and several factors such as market drivers, demand by investment beneficiaries, executives initiating and creating demand, and to a degree regulatory requirements have propelled ESG into the mainstream.⁹²⁷ ESG benefits are seen as truly global in nature with the majority of asset owners placing a strong emphasis on the use of ESG integration as part of the decision-making process that incorporates environmental and social objectives to performance and value of an organisation.⁹²⁸ Impatience is an issue when investment decisions are being made by fund managers who are themselves evaluated by the annual company reports because return on investments is still perceived in terms of share value and the yearly dividend.⁹²⁹ This makes it problematic for sustainable decision making which may require and often does

⁹²⁴ Galbreath 2013 *JBE* 529-541.

⁹²⁵ Yu, Guo, & Luu 2018 *Business Strategy and the Environment* 988. ESG transparency and firm value. In the United States ESG has grown as a result of three influences, the first being policy driven by the US 2015 Department of Labour ruling on ESG in *Employee Retirement Income Security Act* (ERISA). This now means "Pension fund fiduciaries can now consider material environmental, social, and governance (ESG) issues facing the companies in their investment". In addition to this in the EU, the Non-Financial Reporting Directive requires more than 6000 companies to report ESG information on an annual basis. Secondly, academic literature has provided empirical studies that show that a positive relationship between ESG factors and corporate financial performance leads to the improvement of financial returns for companies. Thirdly, the formation of ESG performance standards, measurement and reporting, which are supported by the Sustainability Accounting Standards Board (SASB) created in 2011 and the International Integrated Reporting Council (IIRC) formed in 2010, has resulted in more certainty and predictability.

⁹²⁶ Eccles, Kastrapeli and Potter 2017 *J Appl Corp Finance* 126.

⁹²⁷ Eccles, Kastrapeli and Potter 2017 *J Appl Corp Finance* 126.

⁹²⁸ Eccles, Kastrapeli and Potter 2017 *J Appl Corp Finance* 126.

⁹²⁹ Eccles, Kastrapeli and Potter 2017 *J Appl Corp Finance* 128.

require longer term horizons and this is seen in the time frames between American Fund Managers and European Fund Managers.⁹³⁰ Whilst share-holder activism has grown on making companies more transparent and accountable, some investors still insist on unsustainable growth of shares. The model is built on growth which may be unsustainable and harmful to the environment, needs an urgent rethink on how value can be created. The modern economic model is principally built on a "growth" trajectory. Current research states that the biggest obstacle to ESG integration is the lack of standards.⁹³¹ In some jurisdictions where standards exist, the implementation thereof remains questionable because of issues of interpretation on how to actually implement the standards.⁹³²

Differences in investment strategies principally between equity investors and fixed income investors create disparity in the implementation of ESG.⁹³³ Fixed income investors are more likely to see a lack of standards for measuring ESG performance than their counterparts in the equity investment portfolio.⁹³⁴ Asset owners and managers believe that the eventual implementation of ESG will be the strengthening of sustainability reporting standards.⁹³⁵ Sustainability needs to be viewed in the context of value creation, direction towards a less intensive carbon-based energy generation world, and being more inclusive of ethical business practices.⁹³⁶

Client demand is growing exponentially, and this has seen the growth of different asset classes.⁹³⁷ Some creative and imaginative strategic insight is required by financial institutions to drive ESG integration so as to suit the unique characteristics of each investment destination.⁹³⁸ As the fiduciary duty evolves, fund managers may

⁹³⁰ Eccles, Kastrapeli and Potter 2017 *J Appl Corp Finance* 128.

⁹³¹ Eccles, Kastrapeli and Potter 2017 *J Appl Corp Finance* 130.

⁹³² Eccles, Kastrapeli and Potter 2017 *J Appl Corp Finance* 130.

⁹³³ Eccles, Kastrapeli and Potter 2017 *J Appl Corp Finance* 133.

⁹³⁴ Eccles, Kastrapeli and Potter 2017 *J Appl Corp Finance* 130.

⁹³⁵ Eccles, Kastrapeli and Potter 2017 *J Appl Corp Finance* 130.

⁹³⁶ Eccles, Kastrapeli and Potter 2017 *J Appl Corp Finance* 131-132. Barriers can be overcome but this will require an industry wide participation by all stakeholders. Training on ESG factors and the re-evaluation of measuring performance of fund managers and analysts is required, this needs to be supported by the leadership of these organisations as well as the shareholders.

⁹³⁷ Eccles, Kastrapeli and Potter 2017 *J Appl Corp Finance* 132.

⁹³⁸ Eccles, Kastrapeli and Potter 2017 *J Appl Corp Finance* 133.

find themselves being more accountable for the investment decision and self-education by the investor may lead to "investors employing ESG analysis more consistent with holistic measurement of risk and resiliency".⁹³⁹ Corporate governance issues in some regions have led to the evolving role of fiduciary duties and stewardship of towards regulatory frameworks being supported for ESG.⁹⁴⁰

The Financial Times Stock Exchange Russell (FTSE Russell), a leading provider of benchmarking, analytics and data for investment, states in its overview of ESG that:

As more investors are incorporating ESG considerations into their decision making there is a need for data that is quantitative and transparent and minimises the subjectivity inherent in a number of ESG issues.⁹⁴¹

Share value has consistently been shown to be less volatile when ESG considerations are made.⁹⁴² Regulation through Stock Exchanges can influence ESG implementation by creating listing guidelines around ESG disclosure.⁹⁴³ The United Nations Sustainable Stock Exchange Initiative of 2017 asserts that stock exchanges can self-regulate regarding ESG disclosure.⁹⁴⁴ This is done by encouraging exchanges to voluntarily make commitments for the promotion of improved ESG disclosure and actual ESG performance among listed companies.⁹⁴⁵ There are 66 global exchanges

⁹³⁹ Eccles, Kastrapeli and Potter 2017 *J Appl Corp Finance* 133.

⁹⁴⁰ Eccles, Kastrapeli and Potter 2017 *J Appl Corp Finance* 133.

⁹⁴¹ JSE date unknown <https://www.jse.co.za/services/market-data/indices/socially-responsible-investment-index>. The FTSE Russell is a wholly owned subsidiary of the London Stock Exchange (LSEG) and is a unit of the Information Services Division. The FTSE Russell further states that the "ESG Ratings and data model allows investors to understand a company's exposure to, and management of, ESG issues in multiple dimensions. The ESG Ratings are comprised of an overall Rating that breaks down into underlying Pillar and Thematic Exposures and Scores. The Pillars and Themes are built on over 300 individual indicator assessments that are applied to each company's unique circumstances" - FTSE Russell date unknown https://research.ftserussell.com/products/downloads/ESG-ratings-overview.pdf?_ga=2.215301143.1894115117.1592332096-989630327.1592332096 2.

⁹⁴² Kumar *et al* 2016 *JSFI* 292-300.

⁹⁴³ Yu, Guo and Luu 2018 *Business Strategy and the Environment* 988. In China the Ministry of Environmental Protection with the assistance of the China Securities Regulatory Commission launched the Green Security Law in 2008. Listed firms in China are required by law to disclose information about their environmental record. In the UK, the *Companies Act* issued in 2006 states that companies in the UK should disclose information "on their annual review on environmental, employee, social and community matters to provide an understanding of the performance and development of the company".

⁹⁴⁴ Yu, Guo and Luu 2018 *Business Strategy and the Environment* 988.

⁹⁴⁵ Yu, Guo and Luu 2018 *Business Strategy and the Environment* 988.

that have committed to this initiative.⁹⁴⁶ Various research suggests that companies with better transparency as a result of ESG implementation are able to "obtain capital at a lower cost because of better operational reputational cost, resulting in lower reputational risk".⁹⁴⁷ Firms with less complicated holding structures and with an emphasis on research and development are more likely to disclose on ESG issues.⁹⁴⁸

ESG scores provide some performance indication of a company at the micro level.⁹⁴⁹ There are many components to the score, these involve analysis and ranking which are then combined in an aggregate ESG score per sector or region and then providing an overall portfolio score.⁹⁵⁰ Variance has ascended as many companies use different metrics and underlying factors to arrive at their scores.⁹⁵¹ Numerous external and commercial providers have devised their own systems in which case "the methodologies are quantitative, [and] the assessments are predominantly qualitative".⁹⁵²

It has been found that firms with less elaborative holding structures and with a lower percentage of institutional investors, better liquidity and higher research and development intensity will disclose more on ESG.⁹⁵³ A collaborative effort from all stake holders especially the regulatory authorities, stock exchanges, security regulators, investors (both institutional and individual shareholders) need to be vigilant in upholding the values of ESG.⁹⁵⁴

Increased climate change concerns have given rise to an investor base particularly from OECD countries seeking investment opportunities that mitigate against climate change.⁹⁵⁵ In 2014 a coalition of investors seeking the elevation of ESG issues

⁹⁴⁶ Yu, Guo and Luu 2018 *Business Strategy and the Environment* 988.

⁹⁴⁷ Yu, Guo and Luu 2018 *Business Strategy and the Environment* 989.

⁹⁴⁸ Yu, Guo and Luu 2018 *Business Strategy and the Environment* 1002.

⁹⁴⁹ Inderst and Stewart 2018 *World Bank Group Publication* 24.

⁹⁵⁰ Inderst and Stewart 2018 *World Bank Group Publication* 24.

⁹⁵¹ Inderst and Stewart 2018 *World Bank Group Publication* 24.

⁹⁵² Inderst and Stewart 2018 *World Bank Group Publication* 24. Two market leaders have arisen in the provision of ESG scoring, these are Sustainalytics and MSCI.

⁹⁵³ Yu, Guo and Luu 2018 *Business Strategy and the Environment* 1002.

⁹⁵⁴ Yu, Guo and Luu 2018 *Business Strategy and the Environment* 1002.

⁹⁵⁵ CBI 2015 <https://www.climatebonds.net/resources/publications/scaling-green-bond-markets-sustainable-development> 5.

representing US\$ 24 trillion of assets under management coordinated by the Global Investor Council on Climate Change, the UN PRI and UNEP made a statement saying they were ready to invest in low-carbon and climate resilient investments.⁹⁵⁶ Governments were called upon to support the increase in investment and climate solutions.⁹⁵⁷

Climate finance forms a material link with ESG as some reports have started making the nexus with financial stability.⁹⁵⁸ Climate finance is intricately connected to climate change issues which provide for two main channels of risk, these being physical risks and transition risks.⁹⁵⁹ Physical risks cause damage and greater harm to infrastructure as a result of weather-related events and broader climate trends.⁹⁶⁰ The International Monetary Fund (IMF) defines "transition risks" as arising in the price of stranded assets (assets such as coal and oil that will not be used during the fossil fuel phase-out) and relate to the economic disruptions from climate-related policies, technology, market sentiment during the adjustment to a lower carbon economy.⁹⁶¹ Investor activism saw the application of sustainability principles in the equities market which led to sustainability being applied across the other different market types, primarily the income markets, with bonds that finance environmental projects, which led to the emergence of green bonds.⁹⁶²

⁹⁵⁶ CBI 2015 <https://www.climatebonds.net/resources/publications/scaling-green-bond-markets-sustainable-development> 5.

⁹⁵⁷ CBI 2015 <https://www.climatebonds.net/resources/publications/scaling-green-bond-markets-sustainable-development> 5.

⁹⁵⁸ Papageorgiou, Schmittmann and Suntheim 2019 <https://blogs.imf.org/2019/10/10/connecting-the-dots-between-sustainable-finance-and-financial-stability/>.

⁹⁵⁹ Papageorgiou, Schmittmann and Suntheim 2019 <https://blogs.imf.org/2019/10/10/connecting-the-dots-between-sustainable-finance-and-financial-stability/>.

⁹⁶⁰ Papageorgiou, Schmittmann and Suntheim 2019 <https://blogs.imf.org/2019/10/10/connecting-the-dots-between-sustainable-finance-and-financial-stability/>.

⁹⁶¹ Papageorgiou, Schmittmann and Suntheim 2019 <https://blogs.imf.org/2019/10/10/connecting-the-dots-between-sustainable-finance-and-financial-stability/>.

⁹⁶² Papageorgiou, Schmittmann and Suntheim 2019 <https://blogs.imf.org/2019/10/10/connecting-the-dots-between-sustainable-finance-and-financial-stability/>.

3.6 Green bonds

3.6.1 Green bonds as climate finance

Green bonds can be regarded as climate finance.⁹⁶³ In achieving the objectives of the *Paris Agreement* green bonds have risen as market instruments in the investment of assets that support the transition to a low carbon and climate resilient economy.⁹⁶⁴ The United Nations has recognised the emergence of green bonds as "one of the most significant developments in the financing of low-carbon, climate resilient investment opportunities".⁹⁶⁵ Green bonds enhance commitments to the *Paris Agreement* by demonstrating national leadership in the green financing agenda while giving exposure to a new investor base and solidifying a country's commitment to low carbon and resilient infrastructure needs.⁹⁶⁶

As a central and necessary element of the climate change regime the UNFCCC⁹⁶⁷ stipulates that, in accordance with the principle of "common but differentiated responsibilities and respective capabilities", developed countries shall "provide new and additional financial resources" to assist developing countries in fulfilling their obligations under the Convention as per Article 11.⁹⁶⁸ The UNFCCC under Article 2 of the *Paris Agreement* requires an alignment of financial flows with climate change objectives such as making financial flows consistent with climate change mitigation.⁹⁶⁹ Climate finance should be seen in the context of supporting climate change policies and building resilience against the threats of climate change.⁹⁷⁰ In this context green bonds should therefore be seen as a subset of climate finance⁹⁷¹ with the same objectives of addressing "social and environmental challenges while

⁹⁶³ See para 2.2.

⁹⁶⁴ CBI 2020 https://www.climatebonds.net/files/reports/sovereign_briefing2017.pdf 3.

⁹⁶⁵ SBN 2018 <https://www.climatebonds.net/resources/reports/creating-green-bond-markets-in-sights-innovations-and-tools-emerging-markets> i.

⁹⁶⁶ IFC 2018 https://www.ifc.org/wps/wcm/connect/f9f126e3-4536-470b-934c-e826f426b50d/20180320_Guidance-for-Sovereign-Green-Bond-Issuers_v1.pdf?MOD=AJPERES&CVID=m940tsS 4.

⁹⁶⁷ On a discussion of the main aims and content of the UNFCCC see para 3.2.2 above.

⁹⁶⁸ Pickering, Betzold and Skovgaard 2017 *Int'l Environ Agreements* 4.

⁹⁶⁹ UNFCCC Article 2.

⁹⁷⁰ Romano *et al Climate Finance* 28.

⁹⁷¹ See para 3.4 for a discussion on the climate finance framework.

unlocking the investment opportunity and increasing financial stability through enhanced risk management".⁹⁷²

The largest managed financial mechanism is the bond market and therefore the "challenge is not to create new capital, but to shift a portion of existing investment into low-carbon development".⁹⁷³ The *Paris Agreement* reiterates the urgent call for developed countries to spearhead the mobilisation of climate finance "from a wide variety of sources, instruments and channels" in a "progression beyond previous efforts".⁹⁷⁴ Innovative financial mechanisms such as green bonds should be seen as heeding the clarion call of the *Paris Agreement* to financing the transition to low carbon, resilient and sustainable economies. Green bonds as a financial mechanism potentially provide the scale to match the enormity of climate change and the proposition is that they pose an opportunity for sustainable and impactful investments.⁹⁷⁵ Green bonds as stated by the International Finance Corporation (IFC):

... are proving to be a promising vehicle for raising awareness, promoting disclosure, and mobilising the capital necessary to accelerate economic growth in climate friendly ways.⁹⁷⁶

Green bonds are seen as a response mechanism to the climate related investment opportunities.⁹⁷⁷ Best practice has emerged from these segments on the listing and growth of the green bond market.⁹⁷⁸ Private finance is almost three times larger than

⁹⁷² SBN 2018 <https://www.climatebonds.net/resources/reports/creating-green-bond-markets-in-sights-innovations-and-tools-emerging-markets> x.

⁹⁷³ Kidney, Clenaghan and Oliver "Climate bonds" 241.

⁹⁷⁴ Watson, Bird and Schalatek 2019 <https://www.odi.org/publications/5157-climate-finance-fundamentals> 1.

⁹⁷⁵ SBN 2018 <https://www.climatebonds.net/resources/reports/creating-green-bond-markets-in-sights-innovations-and-tools-emerging-markets> vii.

⁹⁷⁶ SBN 2018 <https://www.climatebonds.net/resources/reports/creating-green-bond-markets-in-sights-innovations-and-tools-emerging-markets> vii.

⁹⁷⁷ SBN 2018 <https://www.climatebonds.net/resources/reports/creating-green-bond-markets-in-sights-innovations-and-tools-emerging-markets> 4. Green bonds, geared towards green infrastructure and decisiveness which are embedded in the *Paris Agreement*, have rapidly expanded their footprint globally with many countries now having investment opportunities in dedicated green segments of their stock exchanges (31). See also para 2.4.

⁹⁷⁸ SBN 2018 <https://www.climatebonds.net/resources/reports/creating-green-bond-markets-in-sights-innovations-and-tools-emerging-markets> 19.

that of public finance, this emphasise the role of capital markets and if contextualised in terms of the trillions required for climate change mitigation and adaption, countries need well developed capital markets to attract investment.⁹⁷⁹ Growth of capital markets in developing countries is imperative if the investment into sustainable sources of energy are to be achieved. This provides context for why green bonds are and would be an effective instrument for climate finance. Green bonds can effectively attract the much-needed investment into renewable energy sources thus growing the capital markets in developing countries. Large institutional investors have two main benefits of green bonds, amongst many others, firstly they assist with corporate branding which sends a strong signal to the market on commitments to climate change and secondly, they attract new investors by tapping into a wider base of investors.⁹⁸⁰ Many funds are guided and informed by this approach.

International financial institutions incorporate climate change, guidelines and standards into their financial modelling.⁹⁸¹ These guidelines (such as Green Bond Principles, or aspects of these guidelines) encapsulate best practice. The aim of many of these voluntary guidelines is to provide transparency and reliable data analytics for the future. A more methodical estimation in climate impact activities has seen a much more measured approach to addressing climate change modelling into the financial scenario.⁹⁸² Various approaches are being modelled into the estimation and measurement of climate impacts, with new tools such as *ex ante* appraisal and *ex post facto* evaluation being tested on projects that have GHG impacts.⁹⁸³ Research suggests that there is an increase in evaluation procedures which enhances the credibility of the results.⁹⁸⁴ This has led to some beneficial sharing of mutual best

⁹⁷⁹ See para 2.2 above.

⁹⁸⁰ SBN 2018 <https://www.climatebonds.net/resources/reports/creating-green-bond-markets-in-sights-innovations-and-tools-emerging-markets> 9.

⁹⁸¹ UNEP FI 2014 <https://www.unepfi.org/fileadmin/documents/FinancialInstitutionsTakingActionOnClimateChange.pdf> 35.

⁹⁸² Chaum *et al* 2011 <https://www.climatepolicyinitiative.org/wp-content/uploads/2011/12/Improving-Effectiveness-of-Climate-Finance.pdf> 10.

⁹⁸³ Chaum *et al* 2011 <https://www.climatepolicyinitiative.org/wp-content/uploads/2011/12/Improving-Effectiveness-of-Climate-Finance.pdf> 10.

⁹⁸⁴ Chaum *et al* 2011 <https://www.climatepolicyinitiative.org/wp-content/uploads/2011/12/Improving-Effectiveness-of-Climate-Finance.pdf> 10.

practices in the sector.⁹⁸⁵ Standardisation of best practice tools and methodologies will allow for a comparative analysis to be made across jurisdictions in an effort to set an internationally accepted standard.⁹⁸⁶ Leadership from a political front as well as civil society involvement have increased between developed and developing countries resulting in the promotion of transparency, mutual accountability and aid effectiveness with an amplified demand for credible metrics.⁹⁸⁷

Poland was the first sovereign to issue a Sovereign Green Bond, aimed "at financing or refinancing environmental expenditures".⁹⁸⁸ This bond finances and refinances projects that contribute to Poland's progress in meeting its GHG reduction targets and promote the country's transition to a low carbon economy.⁹⁸⁹ The issuance was raised from the initial € 500 to € 750 million due to large investor demand.⁹⁹⁰ True to the nature of green bonds they were oversubscribed. These bonds, according to the Ministry of Finance, will finance (a) renewable energy generation and the manufacturing of the components for wind, solar and tidal biomass energy generation; (b) waste biomass only and no biomass cogeneration in coal power plants will be included; (c) clean transportation, such as new and upgraded rail infrastructure, electric rolling stock, however, no rail investment to shift coal will be included; (d) sustainable agricultural operations, including organic farming, more efficient farming methods; afforestation; (e) National Parks for the conservation and restoration of natural habitats, educational activities to enhance awareness,

⁹⁸⁵ Chaum *et al* 2011 <https://www.climatepolicyinitiative.org/wp-content/uploads/2011/12/Improving-Effectiveness-of-Climate-Finance.pdf> 10.

⁹⁸⁶ Chaum *et al* 2011 <https://www.climatepolicyinitiative.org/wp-content/uploads/2011/12/Improving-Effectiveness-of-Climate-Finance.pdf> 7.

⁹⁸⁷ Chaum *et al* 2011 <https://www.climatepolicyinitiative.org/wp-content/uploads/2011/12/Improving-Effectiveness-of-Climate-Finance.pdf> 10.

⁹⁸⁸ MF of Poland 2019 file:///C:/Users/p10180869/Downloads/Green_Bond_Report_on_the_Use_of_Proceeds_2_emisja.pdf 3.

⁹⁸⁹ CBI 2016 <https://www.climatebonds.net/2016/12/poland-wins-race-issue-first-green-sovereign-bond-new-era-polish-climate-policy>.

⁹⁹⁰ CBI 2016 <https://www.climatebonds.net/2016/12/poland-wins-race-issue-first-green-sovereign-bond-new-era-polish-climate-policy>.

encourage environmental care; and (f) reclamation of heaps: remediation of contaminated land, soil remediation.⁹⁹¹

Several sovereign green bonds ensued amid calls to increase green bond issuance to US\$ 1 trillion by 2020 by the Climate Bonds Initiative.⁹⁹² A Sovereign Green Bond⁹⁹³ can be used by states as a catalyst for financing green infrastructure, creating moral leadership on sustainability, setting a path for the private sector issuers to widen their investor base and governments can leverage capital for their infrastructure plans that are aligned to their Nationally Determined Contribution (NDC).⁹⁹⁴ Sovereign Green Bonds can signal a country's commitment to a low carbon economy by reducing capital costs for green projects and mobilising a broader pool of investors towards sustainable development infrastructure.⁹⁹⁵

The growth of sovereign bonds in recent times has been phenomenal. Current investments exceed US\$ 66 trillion. Sovereign bonds capture a range of macro-economic factors, influence broader capital market pricing and reflex system stability and are core holdings for financial institutions.⁹⁹⁶ The growth of the Sovereign Green Bond has developed as "a result of institutional investors and credit ratings agencies deepening their focus on the link between sovereign bond performance and environmental, social and governance (ESG) criteria".⁹⁹⁷ Sovereign Green Bonds provide governments with a pathway towards green economies using financial tools well understood by their markets. The inclusion of the GBP⁹⁹⁸ into the core of the

⁹⁹¹ CBI 2016 <https://www.climatebonds.net/2016/12/poland-wins-race-issue-first-green-sovereign-bond-new-era-polish-climate-policy>.

⁹⁹² CBI 2020 https://www.climatebonds.net/files/reports/sovereign_briefing2017.pdf.

⁹⁹³ Sovereign Green Bonds are akin to mainstream sovereign bonds in many ways. Pricing and transaction costs are similar, and they are listed, traded and regulated in the same way as other bonds. Like conventional sovereign bonds, green equivalents are based on the creditworthiness of the issuer and are risk-weighted and credit-rated using the same methodology. Gargaro *et al* 2017 <https://www.whitecase.com/sites/whitecase/files/files/download/publications/client-alert-green-bonds-an-introduction.pdf>.

⁹⁹⁴ IFC 2018 https://www.ifc.org/wps/wcm/connect/f9f126e3-4536-470b-934c-e826f426b50d/2018_0320_Guidance-for-Sovereign-Green-Bond-Issuers_v1.pdf?MOD=AJPERES&CVID=m940tsS 4.

⁹⁹⁵ CBI 2020 https://www.climatebonds.net/files/reports/sovereign_briefing2017.pdf 2.

⁹⁹⁶ LSE 2020 <https://www.lse.ac.uk/granthaminstitute/publication/the-sovereign-transition-to-sustainability-understanding-the-dependence-of-sovereign-debt-on-nature/> 4.

⁹⁹⁷ LSE 2020 <https://www.lse.ac.uk/granthaminstitute/publication/the-sovereign-transition-to-sustainability-understanding-the-dependence-of-sovereign-debt-on-nature/> 4.

⁹⁹⁸ See 3.6.3 below.

investment decision enables the transition towards low carbon and resilient infrastructure and opportunities into scalable green infrastructure. Sovereign Green Bonds' guidance and leadership add strategic value to the green bond market by further validating low carbon and resilient infrastructure as positively reducing the negative impacts of climate change. Emerging economies would do well to scale up their domestic green bond markets by providing direction in the issuance of a Sovereign Green Bond thus supporting the emergence of a green financial hub.⁹⁹⁹

According to the IFC

Sovereign Green Bonds are similar to vanilla (ordinary) government bonds, but with a particular 'green' purpose given to the use of the proceeds of the bond. Pricing of the bond from investors is not reliant on the underlying return on investment of the projects, but rather the sovereign/risk rating. Sovereign green (and non-sovereign green) bonds typically price on or very near the yield curve of vanilla bonds.¹⁰⁰⁰

The issuance of Sovereign Green Bonds provides for strategic coordination of investments into sustainable low-carbon growth strategies which impact on the private sectors investment case for green sectors.¹⁰⁰¹ Green Bond issuance by the state provides for better tracking of climate-related and sustainable expenditure through the guidance of the core principles they have to adhere to.¹⁰⁰² This allows for better project selection and eligible assets can improve the alignment between the states balance sheet and its ambitions and international commitments.¹⁰⁰³ New socially responsible investors are incorporated into the investor base of sovereign green bonds and these may have large ESG investment mandates.¹⁰⁰⁴ Over time better pricing as a result of investor demand has resulted in treasuries reporting on better performance than past issuances.¹⁰⁰⁵ Reputational benefits have seen countries using green bonds as a promotional tool to diversify single resource-based

⁹⁹⁹ CBI 2018 <https://www.climatebonds.net/resources/reports/bonds-and-climate-change-state-market-2018>.

¹⁰⁰⁰ IFC 2018 https://www.ifc.org/wps/wcm/connect/f9f126e3-4536-470b-934c-e826f426b50d/2018_0320_Guidance-for-Sovereign-Green-Bond-Issuers_v1.pdf?MOD=AJPERES&CVID=m940tsS 9.

¹⁰⁰¹ CBI 2020 https://www.climatebonds.net/files/reports/sovereign_briefing2017.pdf 2.

¹⁰⁰² CBI 2020 https://www.climatebonds.net/files/reports/sovereign_briefing2017.pdf 2.

¹⁰⁰³ CBI 2020 https://www.climatebonds.net/files/reports/sovereign_briefing2017.pdf 2.

¹⁰⁰⁴ CBI 2020 https://www.climatebonds.net/files/reports/sovereign_briefing2017.pdf 3.

¹⁰⁰⁵ CBI 2020 https://www.climatebonds.net/files/reports/sovereign_briefing2017.pdf 3.

economies and thus showing commitment to low-carbon futures.¹⁰⁰⁶ Sovereign Green Bonds have the effect of benchmarking development of the green bond market encouraging best practice.¹⁰⁰⁷ The private sector has often taken the cue from the issuance of Sovereign Green bonds to invest in the low-carbon energy sector.¹⁰⁰⁸ The growth of green bonds can mobilise capital towards infrastructure investment which in turn connects investors with green projects raising awareness around, for example, green project pipelines.¹⁰⁰⁹ The progress of Sovereign Green Bonds is in some jurisdictions encouraged by tax incentives and subsidies for the development of low-carbon assets to crowd-in private investments in priority sectors.¹⁰¹⁰ Cross border collaborations are critical in knowledge sharing as the GHG know no borders.¹⁰¹¹ States can share their experiences enabling the flow of capital especially into emerging economies where the potential for low carbon industries can provide yield to investors.¹⁰¹² Active green bond markets in developing countries can enable debt reduction of refinancing bank loans for infrastructure projects from the operational phase and therefore making them attractive to investors.¹⁰¹³

The next paragraph provides an overview of the best practice guidelines for green bonds that various international organisations and institutions developed.¹⁰¹⁴

3.6.2 International best practice guidelines pertaining to green bonds

The need for best practice guidelines arose from the challenges experienced in issuing green bonds, such as inadequate contractual protection for the investors, the quality of reporting metrics and transparency being opaque and non-transparent, issuer confusion and fatigue, greenwashing and pricing.¹⁰¹⁵ Despite these challenges the

¹⁰⁰⁶ CBI 2020 https://www.climatebonds.net/files/reports/sovereign_briefing2017.pdf 3.

¹⁰⁰⁷ CBI 2020 https://www.climatebonds.net/files/reports/sovereign_briefing2017.pdf 3.

¹⁰⁰⁸ CBI 2020 https://www.climatebonds.net/files/reports/sovereign_briefing2017.pdf 3.

¹⁰⁰⁹ CBI 2020 https://www.climatebonds.net/files/reports/sovereign_briefing2017.pdf 3.

¹⁰¹⁰ CBI 2020 https://www.climatebonds.net/files/reports/sovereign_briefing2017.pdf 3.

¹⁰¹¹ CBI 2020 https://www.climatebonds.net/files/reports/sovereign_briefing2017.pdf 3.

¹⁰¹² CBI 2020 https://www.climatebonds.net/files/reports/sovereign_briefing2017.pdf 3.

¹⁰¹³ CBI 2020 https://www.climatebonds.net/files/reports/sovereign_briefing2017.pdf 3.

¹⁰¹⁴ See para 3.6.

¹⁰¹⁵ Doran and Tanner 2019 <https://www.iflr.com/Article/3893838/Critical-challenges-facing-the-green-bond-market.html>. See also para 2.2.

green bond market still grows. It was realised that these challenges can be resolved by ensuring markets integrity, making the green bond instrument more robust from the investors' perspective, and enhancing product transparency and discipline for all market participants.¹⁰¹⁶

The historical constraints of universally agreed upon legal and commercial definitional terms such as what "green" constitutes¹⁰¹⁷ has resulted in misallocation of funding to non-green projects. The International Capital Market Association (ICMA) and the Green Bond Standards developed a set of that should inform the issuing of green bonds:

- a) Use of proceeds disclosure stating the cash raised will finance new or existing projects that have positive environmental or climate benefits;
- b) Ongoing reporting on the foregoing green use of proceeds
 - The provision of a second opinion by an independent third-party reviewer certifying the green aspects of the bond.¹⁰¹⁸

There has been misalignment in the market with the product-critical elements not being adhered to and resulting in non-conference of actionable rights on the bondholders.¹⁰¹⁹ This has led to "use of proceeds, ongoing maintenance or withdrawal of the published (and relied upon) second opinion review and annual reporting often not included as direct covenants in the terms and conditions of green bonds".¹⁰²⁰ Recourse in the event of breach where the issuer of a bond has failed to utilise the bond proceeds as for stated green project, or where the failure to provide annual reports are not events of default allowing the bondholder to accelerate the process of breach.¹⁰²¹ The risk factors of listed green bonds often specifically highlight that "no event of default or put event will be caused if the use of proceeds or reporting

¹⁰¹⁶ Doran and Tanner 2019 <https://www.iflr.com/Article/3893838/Critical-challenges-facing-the-green-bond-market.html>.

¹⁰¹⁷ See para 2.2.

¹⁰¹⁸ Doran and Tanner 2019 <https://www.iflr.com/Article/3893838/Critical-challenges-facing-the-green-bond-market.html>.

¹⁰¹⁹ Doran and Tanner 2019 <https://www.iflr.com/Article/3893838/Critical-challenges-facing-the-green-bond-market.html>.

¹⁰²⁰ Doran and Tanner 2019 <https://www.iflr.com/Article/3893838/Critical-challenges-facing-the-green-bond-market.html>.

¹⁰²¹ Doran and Tanner 2019 <https://www.iflr.com/Article/3893838/Critical-challenges-facing-the-green-bond-market.html>.

referred to elsewhere in the disclosure document are not complied with".¹⁰²² Such an example is the following:

Although the issuer may agree at the Issue Date to allocate the net proceeds of the issue of the Green Bonds towards the financing and/or refinancing of Eligible Green Assets in accordance with certain prescribed eligibility criteria as described under the Green Bond Framework of the Bank, it would not be an event of default under the Green Bonds if (i) the issuer were to fail to comply with such obligations or were to fail to use the proceeds in the manner specified in this Offering Circular and/or (ii) the Second Party Opinion issued in connection with the Green Bonds Framework were to be withdrawn.¹⁰²³

Doran and Tanner made some core suggestions on how green bonds can be strengthened and standardized, namely by:

Incorporating the green use of proceeds and/or reporting provisions directly into the terms and conditions of the bonds, and

accordingly making them actionable via an agreed put event and/or introducing margin incentives as a penalty for non-compliance.¹⁰²⁴

More accessible regular reporting on a quarterly basis should be made available to the public investor and any interested parties on company websites should be available to avoid the effects of mistrust or "greenwashing". Post-issuance reporting has been found to be critical to ensuring market integrity.¹⁰²⁵ Best practice in terms of the Climate Bonds Initiative report entitled "Post-Issuance Reporting in the Green Bond Market" has shown that the use of the GBP, Climate Bonds Standard (CBS) with the use of country guidance on reporting standards.¹⁰²⁶ The issuance of a green bond

¹⁰²² Doran and Tanner 2019 <https://www.iflr.com/Article/3893838/Critical-challenges-facing-the-green-bond-market.html>.

¹⁰²³ Doran and Tanner 2019 <https://www.iflr.com/Article/3893838/Critical-challenges-facing-the-green-bond-market.html>.

¹⁰²⁴ Doran and Tanner 2019 <https://www.iflr.com/Article/3893838/Critical-challenges-facing-the-green-bond-market.html>.

¹⁰²⁵ CBI 2020 https://www.climatebonds.net/files/files/ClimateBonds_Green_Bonds_Post_Issuance_Use_of_Proceeds_Report_270617%284%29.pdf.

¹⁰²⁶ Especially the standards developed by the People's Bank of China Green Bond Guidelines and Endorsed Project Catalogue, the Securities Exchange Board of India (SEBI) guidelines for Green Debt Securities and those of the Ministry of Japan Guidelines on green bonds have provided best practice on green bond listings and overall integrity in those markets - CBI 2020 https://www.climatebonds.net/files/files/ClimateBonds_Green_Bonds_Post_Issuance_Use_of_Proceeds_Report_270617%284%29.pdf. Due to the scope of this thesis, they could not be discussed.

is primarily based on the Green Bond Principles, the Climate Bonds Standard 2.0 and the new Climate Bonds Standard 3.0, and Country Guidance. The International Finance Corporations Environmental and Social Performance Standards (hereafter IFC Performance Standards) provide an international benchmark for green projects by offering an identification and managing process for environmental and social risks.¹⁰²⁷ The standards, as outlined in the IFC Performance Standards often apply to projects that are financed by banks aligned to the Equator Principles.¹⁰²⁸ The eight IFC Environmental and Performance Standards establish a private regulatory framework and these are:¹⁰²⁹

Performance Standard 1: Assessment and Management of Environmental and Social Risks and Impacts;

¹⁰²⁷ IFC 2012 https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/sustainability-at-ifc/publications/publications_handbook_pps. IFC *Performance Standards* define clients' responsibilities for managing their environmental and social risks. This applies to all investment and advisory projects that go through the IFC. This has applied since 2012. IFC's Sustainability Framework articulates the Corporation's strategic commitment to sustainable development, and is an integral part of the IFC's approach to risk management. IFC *Performance Standards on Environmental and Social Sustainability* January 1, 2012.

¹⁰²⁸ IFC 2019 https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/sustainability-at-ifc/company-resources/sustainable-finance/equator+principles+financial+institutions. The Equator Financial Institutions (EPFIs) encourage their clients to address potential or actual adverse risks and impacts identified during the Project Development Lifecycle. The projects financed are socially responsible and reflect sound environmental practices. There is acknowledgement that EPFIs can contribute to delivering on the objectives and outcomes of the United Nations Sustainable Development Goals (SDGs). Projects financed will have to (i) fulfil responsibilities in respect to human rights in line with the UN Guiding Principles on Business and Human Rights (UNGPs) by carrying out human rights due diligence; (ii) support the objectives of the 2015 *Paris Agreement* and recognise that EPFIs have a role to play in moving the availability of climate-related information, such as the Recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) when assessing the potential transition and physical risks and of projects financed under the Equator Principles; and (iii) support conservation including the aim of enhancing the evidence base for research and decisions relating to biodiversity.

¹⁰²⁹ IFC 2012 https://www.ifc.org/wps/wcm/connect/Topics_Ext_Content/IFC_External_Corporate_Site/Sustainability-At-IFC/Policies-Standards/Performance-Standards (hereinafter referred to as IFC *Performance Standards*). The *Performance Standards* are directed towards clients, providing guidance on how to identify risks and impacts, and are designed to help avoid, mitigate, and manage risks and impacts as a way of doing business in a sustainable way, including stakeholder engagement and disclosure obligations of the client in relation to project level activities. In the case of direct investment made by the IFC (including project and corporate finance provided through financial intermediaries), the IFC requires its clients to apply the Performance Standards to manage environmental and social risks and impacts so that development opportunities are enhanced. The IFC uses a Sustainability Framework along with other strategies, policies, and initiatives to direct the business activities of the corporation in order to achieve its overall development objectives. The Performance Standards may also be applied by other financial institutions.

Performance Standard 2: Labour and Working Conditions;¹⁰³⁰
 Performance Standard 3: Resource Efficiency and Pollution Prevention;
 Performance Standard 4: Community Health, Safety and Security;
 Performance Standard 5: Land Acquisition and Involuntary Resettlement;
 Performance Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources;
 Performance Standard 7: Indigenous Peoples;
 Performance Standard 8: Cultural Heritage.¹⁰³¹

Additionally, to the IFC Standards, local and international laws must be complied with, regardless of whether such laws are regularly or consistently enforced by local government institutions.¹⁰³² The IFC Performance Standards apply in the case of all investments made through the IFC which is now arguably the largest green bond investor.¹⁰³³ The standards succinctly explain the various scenarios that may develop with regard to non-compliance and adherence to the performance standards. Clients of the IFC must establish a Social and Environmental Assessment and Management System.¹⁰³⁴ Companies or financial institutions financed by the IFC, are therefore mandated to take assessments of the social and environmental impacts, risks and opportunities of projects.¹⁰³⁵ They are also required to engage with local communities, disclose necessary information, create grievance resolution

¹⁰³⁰ IFC *Performance Standards* 2-8 establish objectives and requirements to avoid, minimise, and where residual impacts remain, to compensate/offset for risks and impacts to workers, affected communities, and the environment. While all relevant environmental and social risks and potential impacts should be considered as part of the assessment, Performance Standards 2-8 describe potential environmental and social risks that require particular attention.

¹⁰³¹ IFC *Performance Standards*. The Performance Standards are directed towards clients, providing guidance on how to identify risks and impacts, and are designed to help avoid, mitigate, and manage risks and impacts as a way of doing business in a sustainable way, including stakeholder engagement and disclosure obligations of the client in relation to project level activities.

¹⁰³² Torrance 2010 <https://www.lexology.com/library/detail.aspx?g=89aabb71-a118-470f-af19-48691b92b680>.

¹⁰³³ IFC *Performance Standards*. Projects eligible for green bond financing are selected from IFC's climate-related loan portfolio. IFC'S Green Bond Process.

¹⁰³⁴ Torrance 2010 <https://www.lexology.com/library/detail.aspx?g=89aabb71-a118-470f-af19-48691b92b680>.

¹⁰³⁵ Torrance 2010 <https://www.lexology.com/library/detail.aspx?g=89aabb71-a118-470f-af19-48691b92b680>.

mechanisms, and manage the social and environmental risks through-out the life of the project.¹⁰³⁶

In each jurisdiction where the IFC makes such investment the higher standard will be applied, that is to say if the country has a higher standard than that of the IFC, that standard will apply.¹⁰³⁷ These Performance Standards apply to all green project investments made by the IFC which are strongly aligned with the SDGs and *Paris Agreement* in the reduction of GHG emissions.¹⁰³⁸ Their enforcement is done through the partner Banks of the IFC and their monitoring units and some of the immediate results have ensured better workmanship from contractors.¹⁰³⁹ The IFC Standards are binding on those entities financed and having chosen to adhere to them in carrying out their operations.¹⁰⁴⁰ The decision to adhere to the IFC Standards may be voluntary but may also be required for business reasons to ensure market competitiveness or access to capital, or to fulfil contractual obligations.¹⁰⁴¹ The IFC Standards constitute a system of transnational rules created by private actors in response to the demands of the marketplace.¹⁰⁴² It is therefore reasonable to conclude that IFC Standards create a legal obligation once public commitments and the incorporation of such standards are made and become part of the contractual agreements.¹⁰⁴³ The IFC Standards are by intent applied through the Social and Environmental Management System ("SEMS") which are established through each project as a system of self-regulation.¹⁰⁴⁴ Banks can therefore be more robust in project selection, based on the specifications of the financing requirements thereby

¹⁰³⁶ Torrance 2010 <https://www.lexology.com/library/detail.aspx?g=89aabb71-a118-470f-af19-48691b92b680>.

¹⁰³⁷ IFC *Performance Standards*.

¹⁰³⁸ IFC *Performance Standards*.

¹⁰³⁹ IFC *Performance Standards*.

¹⁰⁴⁰ Torrance 2010 <https://www.lexology.com/library/detail.aspx?g=89aabb71-a118-470f-af19-48691b92b680>.

¹⁰⁴¹ Torrance 2010 <https://www.lexology.com/library/detail.aspx?g=89aabb71-a118-470f-af19-48691b92b680>.

¹⁰⁴² Torrance 2010 <https://www.lexology.com/library/detail.aspx?g=89aabb71-a118-470f-af19-48691b92b680>.

¹⁰⁴³ Torrance 2010 <https://www.lexology.com/library/detail.aspx?g=89aabb71-a118-470f-af19-48691b92b680>.

¹⁰⁴⁴ Torrance 2010 <https://www.lexology.com/library/detail.aspx?g=89aabb71-a118-470f-af19-48691b92b680>.

ensuring better project preparation to avoid project failure. The withholding of disbursement funds from the IFC by banks in instances of non-compliance with standards has been found to be a strong enough mechanism for ensuring compliance when accompanied by effective monitoring by third parties.¹⁰⁴⁵ Banks through their financial lending can lead in the championing of sustainable green projects by making sustainability a requirement for financial assistance. To achieve the limit of 2⁰ C increase it is estimated that a global cumulative investment of US\$ 53 trillion is required by 2034.¹⁰⁴⁶

The IFC is further committed to sustainable development¹⁰⁴⁷ and its Access to Information Policy.¹⁰⁴⁸ The IFC's Access to Information Policy includes policies which range from transparency, disclosure of obligations directed towards the client in the provision of guidance in the identification of risks and impacts, the mitigation and the management of the risks in a manner that is sustainable in doing business in the long term.¹⁰⁴⁹

As stated before,¹⁰⁵⁰ the issuance of a green bond is primarily based on the GBP,¹⁰⁵¹ the Climate Bonds Standard 2.0,¹⁰⁵² the new Climate Bonds Standard 3.0¹⁰⁵³ and Country Guidance (which is reference to the national laws of each country). The Green Bond Principles were the first guidelines on the market to promote disclosure and transparency and integrity in the market of the issuance and use of green bonds.

3.6.3 Green Bond Principles

The Green Bond Principles (GBP) were established in January 2014 by market participants under the coordination of the ICMA and they constitute the leading

¹⁰⁴⁵ IFC *Performance Standards*.

¹⁰⁴⁶ Wang 2018 *Brooklyn J Corp Fin & Com L* 467.

¹⁰⁴⁷ See para 2.5.5 above.

¹⁰⁴⁸ Paragraph 1 IFC *Performance Standards*. The IFC Performance Standard "articulates the strategic commitment to sustainable development, and is an integral part of the IFC's approach to risk management".

¹⁰⁴⁹ Paragraph 1 IFC *Performance Standards*.

¹⁰⁵⁰ See paras 1.3 and 2.4 above.

¹⁰⁵¹ Also see para 2.3 above.

¹⁰⁵² Also see 3.6.3. Only the new Climate Bond Standard will be discussed for purpose of this study.

¹⁰⁵³ Also see para 3.6.4.

framework globally for issuance of green bonds.¹⁰⁵⁴ The principles are widely accepted for the development of the green bond market by providing issuers guidance on key components in the launch of green bonds; they aid investors by ensuring availability of information necessary to evaluate the environmental and social impact of the green bonds; and they also assist underwriters by moving the market towards standard disclosure which will facilitate transactions.¹⁰⁵⁵ These voluntary guidelines which are not law, are regularly updated and set green bond project definitions and requirements of disclosure.¹⁰⁵⁶ The guidelines are an important aspect of the growth of green bonds because they primarily dispel misconceptions regarding costs and complexities of the green debt issuance and process.¹⁰⁵⁷ This catalyses green bond issuance and builds market integrity and confidence.¹⁰⁵⁸ The ICMA provides a framework for green bond guidance which includes:

- Meeting climate and infrastructure targets: green bonds have the potential of meeting the climate goals of the *Paris Agreement* and the SDG goals related to infrastructure and climate.
- Maintaining market integrity provides clarity for investors attracted to the "green impact". Market integrity limits risk of greenwashing. This is an important element in an investor driven market such as green bonds.
- Implementing targeted policies: clarifying what is green enables targeted policy support for low-carbon projects and green bond issuance. In the case of exemptions, subsidies or preferential capital treatment, eligible assets need to

¹⁰⁵⁴ ICMA 2020 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/ICMA-Sustainable-finance-Compendium-of-international-policy-initiatives-best-market-practice-February-2020-200220.pdf> 12.

¹⁰⁵⁵ ICMA 2020 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/ICMA-Sustainable-finance-Compendium-of-international-policy-initiatives-best-market-practice-February-2020-200220.pdf> 12.

¹⁰⁵⁶ ICMA 2020 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/ICMA-Sustainable-finance-Compendium-of-international-policy-initiatives-best-market-practice-February-2020-200220.pdf> 12.

¹⁰⁵⁷ SBN 2018 <https://www.climatebonds.net/resources/reports/creating-green-bond-markets-in-sights-innovations-and-tools-emerging-markets> 8.

¹⁰⁵⁸ SBN 2018 <https://www.climatebonds.net/resources/reports/creating-green-bond-markets-in-sights-innovations-and-tools-emerging-markets> vii.

be easily identifiable to ensure only truly green assets receive envisaged policy support.

- Achieving scale: high volumes are necessary to develop a liquid market and facilitate more investments, enabling the transition to a low carbon economy. Green standards reduce transaction costs, therefore facilitating scale.¹⁰⁵⁹

As stated before, the GBP are based on four pillars, which outline disclosure and reporting for the issuer:¹⁰⁶⁰

- Use of proceeds: the utilisation of the proceeds for financing or re-financing of green projects. The ICMA provides a broad list of eligible projects for financing.¹⁰⁶¹
- Process for evaluation and selection: the issuer should communicate the process by which the green projects have been selected and identified, as well as the related eligibility criteria.
- Management of proceeds: the proceeds should be credited to a sub-account, moved to a sub-portfolio or otherwise tracked by the issuer in an appropriate manner.
- Reporting: issuers should keep up-to-date information on the use of proceeds, to be renewed annually until full allocation of proceeds and as necessary after that in case there are material developments to the use of proceeds. Qualitative performance indicators and quantitative ones, where feasible, are recommended.¹⁰⁶²

Capital allocation to Green Projects is broadly underlined by the categories of investment that green bonds can contribute towards.¹⁰⁶³ These GBP's Green Project

¹⁰⁵⁹ SBN 2018 <https://www.climatebonds.net/resources/reports/creating-green-bond-markets-in-sights-innovations-and-tools-emerging-markets> 9.

¹⁰⁶⁰ Also see para 2.4 above.

¹⁰⁶¹ See para 2.4 above.

¹⁰⁶² SBN 2018 <https://www.climatebonds.net/resources/reports/creating-green-bond-markets-in-sights-innovations-and-tools-emerging-markets> 12.

¹⁰⁶³ According to the London Stock Exchange Group (2019) "A comprehensive guide Navigating the green finance landscape Exploring the market drivers and financial instruments enabling the

categories are aimed at addressing the five environmental objectives of Climate Change Mitigation, Climate Change Adaptation, Natural Resource Conservation, Biodiversity Conservation and Pollution Prevention and Control.¹⁰⁶⁴ The categories related to this study include:

- Renewable energy (including, production, transmission, appliances and products);
- Energy efficiency (such as in new and refurbished buildings, energy storage, district heating, smart grids, appliances and products);
- Clean transportation (such as electric, hybrid, public, rail, non-motorised, multi-modal transportation, infrastructure for clean energy vehicles and reduction of harmful emissions);
- Climate change adaptation (including information support systems, such as climate observation and early warning systems).¹⁰⁶⁵

An external review process is part of the GBP. The issuer of the green bonds must appoint an external review provider to confirm the alignment of their bond or bond programme with the four core components of the GBP. In many jurisdictions external reviews and verification are mandatory as a means of accessing the green segment of the stock exchange.¹⁰⁶⁶ There are different levels of review and types of review available to an issuer.¹⁰⁶⁷ Institutions and consultants that have recognised environmental sustainability or other aspects of the issuance of the green bond can

global transition to a sustainable, low carbon economy" the International Energy Association estimates that the low carbon-transition will require more than \$3.5 trillion in energy requirements every year for decades. To achieve the emission targets of 2050, 95% of electricity supply will need to be low carbon, 70% of new cars will have to be electric, and the carbon intensity of the building sector will need to fall by 80%. The vast sums of money required are available through the bond market - the bond market needs to finance low carbon and resilient infrastructure.

¹⁰⁶⁴ ICMA 2019 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/June-2019/Green-Projects-Mapping-Documents-100619.pdf> 3.

¹⁰⁶⁵ ICMA 2019 Green Project Mapping 4. Also see Kaminker, Majowski and Sullivan 2018 [https://webapp.sebgroup.com/mb/mblib.nsf/a-w/3c57af239091dddfc125822400522b99/\\$file/giz_seb_green_bondpublication_web.pdf](https://webapp.sebgroup.com/mb/mblib.nsf/a-w/3c57af239091dddfc125822400522b99/$file/giz_seb_green_bondpublication_web.pdf) 20.

¹⁰⁶⁶ SBN 2018 <https://www.climatebonds.net/resources/reports/creating-green-bond-markets-in-sights-innovations-and-tools-emerging-markets> 13.

¹⁰⁶⁷ ICMA 2018 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/Green-Bonds-Principles-June-2018-270520.pdf> 6.

be sought as external reviewers.¹⁰⁶⁸ Independent external reviews which now make up ninety per cent of all green bond transactions,¹⁰⁶⁹ may in terms of classification include Second Party Opinion, Verification and Certification.

Second Party Opinion is where an institution with environmental expertise, that is independent from the issuer may issue a Second Party Opinion. The institution should be independent from the issuers' adviser for its Green Bond Framework, or appropriate procedures, such as information barriers, will have been implemented within the institution to ensure the independence of the Second Party Opinion. The opinion normally entails an assessment of the alignment with the Green Bond Principles. The assessment of the issuer's overarching objectives, strategy, policy and/or processes relating to environmental sustainability, and an evaluation of the environmental features of the type of projects intended for the Use of Proceeds.¹⁰⁷⁰

In the case of verification, an issuer obtains independent verification against a designated set of criteria, this typically pertains to business processes and/or environmental criteria. Verification generally focuses on alignment with internal or external standards or the claims made by the issuer. It may also happen that the evaluation of the environmentally sustainable features of the underlying assets may be termed verification and may reference external criteria. Verification may also include assurance or attestation regarding an issuer's internal tracking method for use of proceeds, the allocation of funds from green bonds' proceeds, and a statement of environmental impact or alignment for reporting with the GBP.¹⁰⁷¹

Certification takes place when an issuer has its Green Bonds or associated Green Bond framework or Use of Proceeds certified against a recognised external green standard or label such as the GBP. A standard or label defines specific criteria and

¹⁰⁶⁸ ICMA 2018 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/Green-Bonds-Principles-June-2018-270520.pdf> 6.

¹⁰⁶⁹ CBI 2018 <https://www.climatebonds.net/resources/reports/bonds-and-climate-change-state-market-2018> 11.

¹⁰⁷⁰ ICMA 2018 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/Green-Bonds-Principles-June-2018-270520.pdf> 6.

¹⁰⁷¹ ICMA 2018 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/Green-Bonds-Principles-June-2018-270520.pdf> 6.

alignment with such criteria is normally tested by qualified, accredited third parties, which may verify consistency with the certification criteria.¹⁰⁷²

Green Bond Scoring/Rating takes place when qualified third parties in terms of the set criteria for third party evaluation is met, they evaluate or assess a Green Bond, associated Green Bond framework or a key feature such as Use of Proceeds in terms of the agreed standard or guideline. Qualified third parties include specialised research providers or rating agencies that apply an established scoring methodology. The criteria utilised by third parties is based on a classification system which provides a quantitative scale that weights the projects on their green premium in relation to the Green Bonds. This provides market participants with a ranking mechanism for the green bonds in accordance with their environmental benefits and also provides perspective of the issuers ability to comply with international standards of transparency and reporting.¹⁰⁷³

Market participants are primarily provided with a mechanism to rank the Green Bonds according to the environmental benefits of the project that is being financed by the bond, as well as an evaluation of the ability of the issuer to comply with international standards of transparency and reporting. The evaluation may include a focus on environmental performance data, the process relative to the GBP, or another benchmark, such as a 2⁰ Celsius climate change scenario. Such scoring/rating is distinct from ratings, which may nonetheless reflect material environmental risks.¹⁰⁷⁴

Issuers of green bonds who mislead investors face sanction from the ICMA as well as may suffer reputational harm, thereby struggling to issue any future green bonds.

Whilst the green bond market may still be fledgling, regulatory requirements are in the form of voluntary guidelines as previously stated.¹⁰⁷⁵

¹⁰⁷² ICMA 2018 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/Green-Bonds-Principles-June-2018-270520.pdf> 6.

¹⁰⁷³ HR Ratings 2017 <https://www.cbd.int/financial/greenbonds/mexico-bondsrating2017.pdf>.

¹⁰⁷⁴ ICMA 2018 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/Green-Bonds-Principles-June-2018-270520.pdf> 6.

¹⁰⁷⁵ ICMA 2018 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/Green-Bonds-Principles-June-2018-270520.pdf> 6.

3.6.4 Climate Bonds Standards 3.0

The Climate Bonds Initiative drafted several versions of a Climate Bonds Standard. The latest Climate Bonds Standard 3.0 sets out the requirements to be met for issuers seeking Certification of a green bond, loan or other debt instrument.¹⁰⁷⁶ Labelling of the bond as green is underpinned by confidence and trust that the use of funds will be directed towards projects and assets that meet the main distinguishing factor green bonds are known and used for, which is that their use of proceeds will be used for green investments.¹⁰⁷⁷ This is critical for institutional investors and governments as it provides added confidence that the investment funds are being mobilised for a low carbon and resilient economy thereby aligning with the objectives of the *Paris Agreement* and their NDCs.¹⁰⁷⁸ The aim of the Standard is to provide the green bond market with the trust and assurance needed to achieve scale in meeting the objectives of GHG reduction and building low carbon infrastructure and resilient economies.¹⁰⁷⁹ Projects and assets are defined as per the requirements of the Scientific Framework of the Standard.¹⁰⁸⁰ Classification of projects may however be different from one jurisdiction to another as a result of classification guidelines that vary from one geographic location to another and if so, the investor should be made aware of such classification.¹⁰⁸¹ This allows for certification of the bond as meeting the objectives of the *Paris Agreement* and as being eligible for inclusion as a Certified Climate Bond.¹⁰⁸²

The Climate Bond Standard has been likened to a FairTrade-scheme for climate aligned bonds that build on the GBP disclosure and reporting requirements and includes a Taxonomy with a set of sector-specific, science-based eligibility criteria for

¹⁰⁷⁶ CBI 2019 file:///C:/Users/p10180869/Downloads/CBI_Climate_bonds_standard.pdf 12.

¹⁰⁷⁷ CBI 2019 file:///C:/Users/p10180869/Downloads/CBI_Climate_bonds_standard.pdf 3.

¹⁰⁷⁸ CBI 2019 file:///C:/Users/p10180869/Downloads/CBI_Climate_bonds_standard.pdf 3.

¹⁰⁷⁹ CBI 2019 file:///C:/Users/p10180869/Downloads/CBI_Climate_bonds_standard.pdf 3.

¹⁰⁸⁰ CBI 2019 file:///C:/Users/p10180869/Downloads/CBI_Climate_bonds_standard.pdf 4.

¹⁰⁸¹ ICMA 2019 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/June-2019/Green-Projects-Mapping-Documents-100619.pdf> 3.

¹⁰⁸² CBI 2019 file:///C:/Users/p10180869/Downloads/CBI_Climate_bonds_standard.pdf 4.

green projects.¹⁰⁸³ Oversight and Compliance are based on ongoing monitoring, reporting and assurance of the Standard by leading environmental Non-Governmental Organisations (NGOs), Approved Verifiers, the Certification Scheme and decisions on Certification.¹⁰⁸⁴ The Standard relates exclusively to the climate attributes of the bond and the operational decision making is done by the Climate Bonds Standard Secretariat.¹⁰⁸⁵ Green bonds are based on trust and this trust emanates from the labelling of the bond as green. Investors rely on the screening tools that bonds certified as green are indeed green having undergone the rigour of independent verification and assurance that the use of proceeds are for green projects that are low carbon. The Technical Working Groups and Industry Working Groups are constantly working on the development of the Sector Eligibility Criteria.¹⁰⁸⁶

Certification is an ongoing process and the issuer is required to maintain Certification of the bond on an annual basis by providing detailed reports as per the criteria set out in Certification.¹⁰⁸⁷ The range of projects financed will determine the nature of the reporting required, and the range of reporting is divided into three categories.¹⁰⁸⁸ These categories are Allocation reporting, Eligibility reporting and Impact Reporting.¹⁰⁸⁹ Allocation reporting is confirming the allocation of bond proceeds to eligible projects and assets, and is mandatory for all Certified debt instruments.¹⁰⁹⁰ Eligibility reporting is defined as confirming the characteristics or performance of projects and assets to demonstrate their eligibility under the Taxonomy and relevant

¹⁰⁸³ SBN 2018 <https://www.climatebonds.net/resources/reports/creating-green-bond-markets-in-sights-innovations-and-tools-emerging-markets> 12. The Climate Bonds provide an overview of the mitigation and adaptation investment opportunities across the major sectors of the global economy. It serves as an initial screen for inclusions and exclusions for climate-aligned sectors used by the Climate Bonds Initiative when reviewing labelled bonds or loans for inclusion in its green bond list. The Taxonomy identifies assets and projects needed to deliver a low carbon economy and gives GHG emission criteria consistent with the 2° C warming target set by COP21 *Paris Agreement*. The Taxonomy identifies Energy, Transport, Water, Buildings, Land Use and Marine Resources, Industry, Waste and ICT as the main sectors, within which are sub-sectors of projects which are compatible with a low carbon economy, i.e., under Energy (wind) would be the applicable project 2.

¹⁰⁸⁴ CBI 2019 file:///C:/Users/p10180869/Downloads/CBI_Climate_bonds_standard.pdf 4.

¹⁰⁸⁵ CBI 2019 file:///C:/Users/p10180869/Downloads/CBI_Climate_bonds_standard.pdf 4.

¹⁰⁸⁶ CBI 2019 file:///C:/Users/p10180869/Downloads/CBI_Climate_bonds_standard.pdf 5.

¹⁰⁸⁷ CBI 2019 file:///C:/Users/p10180869/Downloads/CBI_Climate_bonds_standard.pdf 5.

¹⁰⁸⁸ CBI 2019 file:///C:/Users/p10180869/Downloads/CBI_Climate_bonds_standard.pdf 5.

¹⁰⁸⁹ CBI 2019 file:///C:/Users/p10180869/Downloads/CBI_Climate_bonds_standard.pdf 5.

¹⁰⁹⁰ CBI 2019 file:///C:/Users/p10180869/Downloads/CBI_Climate_bonds_standard.pdf 5.

Sector Eligibility Criteria and is mandatory for all Certified debt instruments.¹⁰⁹¹ This provides investors with the confidence that the projects are aligned with the *Paris Agreement* goals.¹⁰⁹² Impact reporting is disclosure of metrics or indicators which reflect the expected or actual impact of eligible projects and assets, and is encouraged for all Certified debt instruments, but is not mandatory.¹⁰⁹³ These three types of reporting can however be included in a single Update Report which can be provided on annual basis.¹⁰⁹⁴ It is preferred by the author that the three reports be complied with especially in less sophisticated bond markets where confidence may be lacking. The Climate Bonds "The state of the market report" in 2018 found that most issuers reported on allocations than on environmental impact.¹⁰⁹⁵ Countries with more sophisticated bond markets and large stock exchanges tended to report on a more regular basis than smaller stock exchanges and by default smaller economies.¹⁰⁹⁶

The Certification process is split into two distinct phases of the bond issuance.¹⁰⁹⁷ Pre-Issuance Requirements are criteria which need to be met for issuers seeking certification ahead of issuance. Post-Issuance Requirements are those requirements that need to be met by issuers seeking ongoing certification following the issuance.¹⁰⁹⁸ It is important to note that Post-Issuance is done after a suitable verifier has prepared a report in line with the Guidance for Verifiers has been completed and a summary of how the issuer and the bond have conformed with each of the four components of the Post-Issuance Requirements of the Climate Bonds Standard and the relevant Sector Eligibility Criteria.¹⁰⁹⁹ An important aspect of the green bond disclosure is the Prospectus or the Final Terms. It is made available to regulatory

¹⁰⁹¹ CBI 2019 file:///C:/Users/p10180869/Downloads/CBI_Climate_bonds_standard.pdf 5.

¹⁰⁹² CBI 2019 file:///C:/Users/p10180869/Downloads/CBI_Climate_bonds_standard.pdf 5.

¹⁰⁹³ CBI 2019 file:///C:/Users/p10180869/Downloads/CBI_Climate_bonds_standard.pdf 5.

¹⁰⁹⁴ CBI 2019 file:///C:/Users/p10180869/Downloads/CBI_Climate_bonds_standard.pdf 5.

¹⁰⁹⁵ CBI 2018 <https://www.climatebonds.net/resources/reports/bonds-and-climate-change-state-market-2018> 9.

¹⁰⁹⁶ CBI 2018 <https://www.climatebonds.net/resources/reports/bonds-and-climate-change-state-market-2018> 9.

¹⁰⁹⁷ CBI 2019 file:///C:/Users/p10180869/Downloads/CBI_Climate_bonds_standard.pdf 6.

¹⁰⁹⁸ CBI 2019 file:///C:/Users/p10180869/Downloads/CBI_Climate_bonds_standard.pdf 6.

¹⁰⁹⁹ CBI 2019 file:///C:/Users/p10180869/Downloads/CBI_Climate_bonds_standard.pdf 27.

authorities where the bond is being offered and may include terms such as term sheet, offering, indenture contract, official bond statement and legal documentation. The indenture contract should stipulate penalties for non-compliance with eligible projects and reporting requirements.

Ongoing Certification is issued by the Climate Bond Initiative and Certification Scheme to the Issuer when all pre-issuance and post-issuance requirements have been met.¹¹⁰⁰ This is done by means of a statement confirming Certification of the Bond under the Climate Bond Standard.¹¹⁰¹ The Issuer then has the right to (subject to the Certification Agreement) use the Certification Mark in association with the relevant Bond.¹¹⁰²

Further Certification is available to issuers with large portfolios of Eligible Projects and Assets, this is known as Programmatic Certification.¹¹⁰³ It allows for greater flexibility with respect to the timing and scale of issued Certified Green Bonds, Climate Bonds, Certified Climate Loans and Climate Debt Instruments.¹¹⁰⁴

Regular reporting by the engaged Verifier on compliance with conformance of the Post-Issuance Requirements and Climate Bond Standard is compulsory.¹¹⁰⁵ In the case of non-conformance with the Post-Issuance Requirements, the Climate Bond Standard may request that a different Verifier be used as a condition of maintaining Certification under the Climate Bonds Standard.¹¹⁰⁶

Where the green bond is no longer in conformance with the Climate Bond Standard, then the Issuer should disclose such information to the Climate Bond Standard within one month of becoming aware of such non-conformance.¹¹⁰⁷ In the event of non-conformance within an agreed time frame, the Climate Bond Standard shall revoke

¹¹⁰⁰ CBI 2019 file:///C:/Users/p10180869/Downloads/CBI_Climate_bonds_standard.pdf 23.

¹¹⁰¹ CBI 2019 file:///C:/Users/p10180869/Downloads/CBI_Climate_bonds_standard.pdf 23.

¹¹⁰² CBI 2019 file:///C:/Users/p10180869/Downloads/CBI_Climate_bonds_standard.pdf 23.

¹¹⁰³ CBI 2019 file:///C:/Users/p10180869/Downloads/CBI_Climate_bonds_standard.pdf 23.

¹¹⁰⁴ CBI 2019 file:///C:/Users/p10180869/Downloads/CBI_Climate_bonds_standard.pdf 23.

¹¹⁰⁵ CBI 2019 file:///C:/Users/p10180869/Downloads/CBI_Climate_bonds_standard.pdf 28.

¹¹⁰⁶ CBI 2019 file:///C:/Users/p10180869/Downloads/CBI_Climate_bonds_standard.pdf 28.

¹¹⁰⁷ CBI 2019 file:///C:/Users/p10180869/Downloads/CBI_Climate_bonds_standard.pdf 29.

such Certification.¹¹⁰⁸ The implications for the Bond are that it cannot use the Certification Mark, or imply that the Certification is still in place.¹¹⁰⁹ The issuer must take all necessary steps to remove the Bond from all relevant lists or indices which require Certification.¹¹¹⁰ All Bond holders must be informed of such withdrawal of Certification as well as the relevant exchanges where such Bond is listed and other transaction parties of the change of the Certification status of the Bond.¹¹¹¹

The Issuer has a right of appeal in the case of revocation by the Climate Bond Standard through the Climate Bond Standard Appeals Mechanism available on the Climate Bond Initiative website.¹¹¹² Some notable differences between the GBP and the Climate Bond Standard are the types of projects financed.¹¹¹³ The GBP focus on low-carbon emission projects whilst the CBS applies its focus on a broader range of projects.¹¹¹⁴ Verification within the CBS process is done by Verifiers that have been approved by the CBS Board.¹¹¹⁵

The latest Climate Bonds Standard Version 3.0 is fully compatible with the proposed European Union Green Bond Standard (EU GBS)¹¹¹⁶ released by its Technical Expert Group (TEG) on sustainable finance in June 2019.¹¹¹⁷

3.6.5 Draft ISO Standard 14030-1 Environmental performance evaluation - Green debt instruments - Part 1: Process for green bonds

The development of the green bond market has further resulted in the International Standard Organisation (ISO) commencing work on standardisation of green bonds by establishing a working group with global representation.¹¹¹⁸ The ISO Standard 14030

¹¹⁰⁸ CBI 2019 file:///C:/Users/p10180869/Downloads/CBI_Climate_bonds_standard.pdf 29.

¹¹⁰⁹ CBI 2019 file:///C:/Users/p10180869/Downloads/CBI_Climate_bonds_standard.pdf 29.

¹¹¹⁰ CBI 2019 file:///C:/Users/p10180869/Downloads/CBI_Climate_bonds_standard.pdf 29.

¹¹¹¹ CBI 2019 file:///C:/Users/p10180869/Downloads/CBI_Climate_bonds_standard.pdf 29.

¹¹¹² CBI 2019 file:///C:/Users/p10180869/Downloads/CBI_Climate_bonds_standard.pdf 29.

¹¹¹³ Wang 2018 *Brooklyn J Corp Fin & Com L* 477.

¹¹¹⁴ Wang 2018 *Brooklyn J Corp Fin & Com L* 477.

¹¹¹⁵ Wang 2018 *Brooklyn J Corp Fin & Com L* 477.

¹¹¹⁶ EU 2019 https://ec.europa.eu/info/publications/sustainable-finance-technical-expert-group_en.

¹¹¹⁷ CBI 2019 file:///C:/Users/p10180869/Downloads/CBI_Climate_bonds_standard.pdf 32.

¹¹¹⁸ SBN 2018 <https://www.climatebonds.net/resources/reports/creating-green-bond-markets-in-sights-innovations-and-tools-emerging-markets> 12.

is in draft form currently.¹¹¹⁹ This standard seeks to give content to the GBP.¹¹²⁰ It will further assist market participants in determining whether the bond is indeed "green",¹¹²¹ harmonise the definition of green bonds¹¹²² and specify requirements to evaluate the performance of the assets they finance as these investors would want to ensure that the outcomes of the project will enhance environmental performance.¹¹²³ Green bonds are defined in the draft as:

... bonds whose net proceeds or an amount equivalent to the net proceeds will be exclusively applied to finance or re-finance in part or in full new or existing eligible projects, assets or activities.¹¹²⁴

The ISO Standard provides guidance on assurance methods.¹¹²⁵ Further support will be gained from ISO Standard 14097¹¹²⁶ which will be used for assessing and reporting investments and financing activities related to climate change by providing a general framework and technical guidance to financial institutions on climate related-metrics.¹¹²⁷ Both standards are still work in progress.¹¹²⁸ These standards may help grow the green bond framework globally. The transition to a low carbon economy represents a global opportunity of \$26 trillion.¹¹²⁹

¹¹¹⁹ ISO/DIS 14030-1 2020 <https://www.iso.org/obp/ui/#iso:std:iso:14030:-1:dis:ed-1:v1:en>.

¹¹²⁰ ISO/DIS 14030-1 2020 <https://www.iso.org/obp/ui/#iso:std:iso:14030:-1:dis:ed-1:v1:en> Introduction.

¹¹²¹ ISO/DIS 14030-1 2020 <https://www.iso.org/obp/ui/#iso:std:iso:14030:-1:dis:ed-1:v1:en> Introduction and clause 5.2.

¹¹²² ISO/DIS 14030-1 2020 <https://www.iso.org/obp/ui/#iso:std:iso:14030:-1:dis:ed-1:v1:en>.

¹¹²³ ISO/DIS 14030-1 2020 <https://www.iso.org/obp/ui/#iso:std:iso:14030:-1:dis:ed-1:v1:en> Introduction. Also see ISO 2018 <https://www.iso.org/files/live/sites/isoorg/files/store/en/PUB100067.pdf>.

¹¹²⁴ ISO 14030-1 2020 <https://www.iso.org/obp/ui/#iso:std:iso:14030:-1:dis:ed-1:v1:en> clause 3.1.2. Annex A of the Standard lists other types of bonds and debt instruments.

¹¹²⁵ ISO 2018 <https://www.mainstreamingclimate.org/iso/> Climate Action in Financial Institutions: Principles for mainstreaming Climate Action.

¹¹²⁶ ISO/DIS 14097 2020 <https://www.iso.org/obp/ui/#iso:std:iso:14097:dis:ed-1:v1:en>. At the time of writing the full version of the draft Standard was not yet available.

¹¹²⁷ ISO and Climate Change <https://www.iso.org/files/live/sites/isoorg/files/store/en/PUB100067.pdf>.

¹¹²⁸ ISO 2018 <https://www.iso.org/files/live/sites/isoorg/files/store/en/PUB100067.pdf>. ISO 14030-1:2020's Introduction (<https://www.iso.org/obp/ui/#iso:std:iso:14030:-1:dis:ed-1:v1:en>) indicates that there will be four ISO 14030 standards, focusing on the process for green bonds (under discussion here), a process for green loans, on taxonomy and one on verification.

¹¹²⁹ LSE 2019 https://docs.londonstockexchange.com/sites/default/files/documents/lseg_green_finance_issuer_guide.pdf.

Draft ISO 14030-1:2020 focus on green bonds that would have positive environmental outcomes.¹¹³⁰ Clause 5.2 deals with the environmental objectives that include, amongst others, climate change mitigation and adaptation. In order to indicate how the organisation has evaluated or selected the projects or activities, amongst others, they have to follow a quality process. The issuer of the green bond therefore has to "establish, document, implement and maintain a process for evaluating and selecting eligible projects, assets or activities" and allocate an "amount equivalent to the net proceeds of any green bond to eligible projects, assets and activities".¹¹³¹ The process for evaluation is set out in clause 5.3(a)-(c) and includes the setting of an environmental objective, the listing of projects, assets or activities and selection a taxonomy select such projects, assets and activities.¹¹³² The issuer has to determine the environmental impacts and risks in accordance with clause 7.¹¹³³ The issuer must use environmental performance indicators and process set out in clause 7.2. The environmental performance indicators include for example energy or greenhouse gas savings.¹¹³⁴

The issuer of the green bond has to apply an eligibility process test that is set out in clause 5.4, which includes, for example, the scope of the project, the positive environmental outcome or contribution, the environmental impacts and risks of the project as well as the method to identify, assess, monitor, manage and report on such. The issuer should at least identify one detailed project eligibility criterion that

¹¹³⁰ ISO 14030-1 2020 <https://www.iso.org/obp/ui/#iso:std:iso:14030:-1:dis:ed-1:v1:en> clause 3.2.2 defines the "environment" as "surroundings in which an organization operates, including air, water, land, natural resources, flora, fauna, humans and their interrelationships". This definition is based on ISO 14001 2015.

¹¹³¹ ISO 14030-1 2020 <https://www.iso.org/obp/ui/#iso:std:iso:14030:-1:dis:ed-1:v1:en> clause 5.3 read with clause 6.

¹¹³² If a taxonomy is not developed, then the issuer of the bond has to comply with clause 5.4 which sets out the eligibility process test.

¹¹³³ In this regard the issuer can make use of ISO 14001 or ISO 14044.

¹¹³⁴ ISO 14030-1 2020 <https://www.iso.org/obp/ui/#iso:std:iso:14030:-1:dis:ed-1:v1:en> clause 7.2(d).

could be used to validate subsequent projects.¹¹³⁵ The project, asset or activity must be independently validated.¹¹³⁶

Clause 6 deals with the management of the proceeds in relation to the allocation of the net proceeds (clause 6.1) as well as the tracking of the proceeds (clause 6.2). If there are unallocated proceeds, they should be "held in temporary investment instruments that are assets with high liquidity and safety" or held in "temporary placements".

Clause 4 lists the principles of transparency, accuracy, completeness, relevant, robustness and accountability that underpin the Standard.¹¹³⁷ These principles correspond with the GBP.¹¹³⁸

The Standard further set out procedures for reporting prior to and post issuance of the green bond.¹¹³⁹ Prior to issuance the information that must be made available to the public include, for example, the environmental objectives, the assessment of the environmental impacts, description of the eligible green projects, the tracking of proceeds, the intended management of the proceeds, the frequency of reporting and conformity to the Standard. This information has to be verified before they can be released. The reporting post issuance before full allocation deals with the list of projects, their geographical distribution, the time of allocation of proceeds and funds,

¹¹³⁵ ISO 14030-1 2020 <https://www.iso.org/obp/ui/#iso:std:iso:14030:-1:dis:ed-1:v1:en> clause 5.4.2. It should also set out the procedures for decision making – clause 5.4.3.

¹¹³⁶ ISO 14030-1 2020 <https://www.iso.org/obp/ui/#iso:std:iso:14030:-1:dis:ed-1:v1:en> clause 5.4.4.

¹¹³⁷ Clause 4.1 states "transparency" denotes "reports and communication on the environmental aspects processes are based on an open, comprehensive and understandable presentation of information". Accuracy (clause 4.2) is to "reduce bias and uncertainties as far as practical". All information should be complete (clause 4.3) and in the case of relevance the appropriate information and data should be selected that will address the needs of the intended user (clause 4.4). "Robustness" is where "Organizations use appropriate methodological approaches and information sources grounded in the latest science to maximize the robustness of their decision-making and environmental actions. Information about uncertainties is recognized as a particularly valuable contribution to decision-making" (clause 4.5). In the case of "accountability" organizations must accept and be responsible for their "positive and negative environmental aspects and assessment processes." They must therefore also allow scrutiny in this regard. See clause 4.6.

¹¹³⁸ See para 2.4.

¹¹³⁹ ISO 14030-1 2020 <https://www.iso.org/obp/ui/#iso:std:iso:14030:-1:dis:ed-1:v1:en> clause 8.1 and 8.2 respectively.

the status of the unallocated proceeds and conformity to the Standard. After full allocation a full report as to the disbursement should be provided¹¹⁴⁰ and how the project performed against the original environmental performance indicators.¹¹⁴¹

It seems that the draft ISO 14030-1:2020 sets out a good procedure that could be read with the procedures set out in the Climate Bonds Standard 3.0 and the GBP. ISO Standards are usually voluntary instruments, but can be incorporated into legislation to ensure a quality verification process, for example.¹¹⁴²

Green bonds have developed a market of related bonds that reflect the continuing development of the use of proceeds bond market.¹¹⁴³ The GBP, Sustainability Bond Guidelines and Sustainability-Linked Bonds (SLBs) are collectively referred to as the "Principles".¹¹⁴⁴ The Principles have been developed by ICMA with the intention of championing and broadening green issues within the financial sector by assisting the financing of environmental and social sustainability infrastructure.¹¹⁴⁵

Sustainability Bonds

... are bonds where the proceeds will be exclusively applied to finance or re-finance a combination of both Green and Social Projects. Sustainability Bonds are aligned with the four core components of both the GBP and Social Bond Principles (SBP) with the former being especially relevant to underlying Green Projects and the latter to underlying Social Projects.¹¹⁴⁶

¹¹⁴⁰ ISO 14030-1 2020 <https://www.iso.org/obp/ui/#iso:std:iso:14030:-1:dis:ed-1:v1:en> clause 8.2.1.

¹¹⁴¹ ISO 14030-1 2020 <https://www.iso.org/obp/ui/#iso:std:iso:14030:-1:dis:ed-1:v1:en> clause 8.2.2.

¹¹⁴² See for example the incorporation of the ISO 50001 energy management standard into regulations issued the s 19 of the *National Energy Act* 34 of 2008 GN R971 in GG 37136 of 9 December 2013.

¹¹⁴³ ICMA 2020 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/Sustainability-Bonds-Guidelines-June-2018-270520.pdf>.

¹¹⁴⁴ ICMA 2020 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/GBP-SBP-GovernanceFinal5-May-2020-110520.pdf>.

¹¹⁴⁵ ICMA 2018 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/GBP-SBP-GovernanceFinal5-May-2020-110520.pdf>.

¹¹⁴⁶ ICMA 2020 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/Sustainability-Bonds-Guidelines-June-2018-270520.pdf>.

They have been developed as voluntary guidance on the promotion of integrity in the market.¹¹⁴⁷ ICMA serves as the Secretariat of the Sustainability Bonds.¹¹⁴⁸ Issuers of Sustainability Bonds fund projects dependent on the primary objectives of the underlying projects being aligned with the four core components of the Sustainability Principles.¹¹⁴⁹ These bonds are not fungible with bonds not aligned with the four core principles of:

- Use of proceeds;
- Process for Evaluation and Selection;
- Management of Proceeds; and
- Reporting.¹¹⁵⁰

The core principles are identical to the GBP through the promotion of transparency and disclosure.¹¹⁵¹ Best practice is inculcated into the issuing of the bonds whilst raising awareness of the environment and providing investment opportunities in sustainable development.¹¹⁵² The core principles aim to transition towards sustainable and carbon-neutral economies by protecting the environment from GHG emissions that arise from fossil fuel generated sources.¹¹⁵³

In further developing the market and the key role debt markets play in financing sustainability initiatives from an ESG perspectives, Sustainability-Linked Bonds (SLBs) have been developed.¹¹⁵⁴ These bonds are defined as:

¹¹⁴⁷ ICMA 2020 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/GBP-SBP-GovernanceFinal5-May-2020-110520.pdf>.

¹¹⁴⁸ ICMA 2020 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/GBP-SBP-GovernanceFinal5-May-2020-110520.pdf>.

¹¹⁴⁹ ICMA 2020 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/Sustainability-Bonds-Guidelines-June-2018-270520.pdf>.

¹¹⁵⁰ ICMA 2018 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/Green-Bonds-Principles-June-2018-270520.pdf>.

¹¹⁵¹ ICMA 2020 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/GBP-SBP-GovernanceFinal5-May-2020-110520.pdf>.

¹¹⁵² ICMA 2020 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/GBP-SBP-GovernanceFinal5-May-2020-110520.pdf>.

¹¹⁵³ ICMA 2020 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/GBP-SBP-GovernanceFinal5-May-2020-110520.pdf>.

¹¹⁵⁴ ICMA 2020 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/June-2020/Sustainability-Linked-Bond-PrinciplesJune-2020-100620.pdf>.

Any type of bond instrument for which the financial and/or structural characteristics can vary depending on whether the issuer achieves predefined Sustainability/ESG objectives. In that sense, issuers are thereby committing explicitly (including in the bond documentation) to future improvements in sustainability outcome(s) within a predefined timeline. SLBs are a forward-looking performance-based instrument.¹¹⁵⁵

Sustainability-Linked Bond Principles (SLBP) are voluntary process guidelines outlining best practice for financial instruments to incorporate forward-looking ESG outcomes and promote integrity in the development of the Sustainability-linked Bond market by clarifying the approach for issuance of a SLB.¹¹⁵⁶

Sustainability Linked Bonds (SLBs) are not to be confused with Sustainability Bonds. The objectives of the SLBs are measured through predefined Key Performance indicators (KPIs) and are assessed against predefined Sustainability Performance Targets (SPTs).¹¹⁵⁷ The use of proceeds is not a determinant and therefore can be used for general purposes however, in some instances an issuer may elect to combine the GBP/SBP approach in the use of the SLBs.¹¹⁵⁸

In achieving the forward-looking ESG outcomes and their best practice, the SLBP provide for broad use by the market in guidance on key components in the launch of a credible and ambitious SLB.¹¹⁵⁹ Investors and Underwriters are aided by the SLBP through the promotion of accountability on issues of sustainability, strategy and availability of information necessary to evaluate their SLB investments.¹¹⁶⁰ Disclosures of credible transactions, promote integrity of the transactions and create confidence and growth in the market.¹¹⁶¹

¹¹⁵⁵ ICMA 2020 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/June-2020/Sustainability-Linked-Bond-PrinciplesJune-2020-100620.pdf>.

¹¹⁵⁶ ICMA 2020 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/June-2020/Sustainability-Linked-Bond-PrinciplesJune-2020-100620.pdf>.

¹¹⁵⁷ ICMA 2020 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/June-2020/Sustainability-Linked-Bond-PrinciplesJune-2020-100620.pdf>.

¹¹⁵⁸ ICMA 2020 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/June-2020/Sustainability-Linked-Bond-PrinciplesJune-2020-100620.pdf>.

¹¹⁵⁹ ICMA 2020 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/June-2020/Sustainability-Linked-Bond-PrinciplesJune-2020-100620.pdf>.

¹¹⁶⁰ ICMA 2020 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/June-2020/Sustainability-Linked-Bond-PrinciplesJune-2020-100620.pdf>.

¹¹⁶¹ ICMA 2020 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/June-2020/Sustainability-Linked-Bond-PrinciplesJune-2020-100620.pdf>.

The SLBP are distinguished by having five core components: (a) Selection of Key Performance Indicators (KPIs); (b) Calibration of Sustainability Performance Targets (SPTs); (c) Bond characteristics; (d) Reporting; and (e) Verification.¹¹⁶²

Communication is indispensable to the process of transparency such that the SLBP recommends issuers publicly communicate their rationale for the selected KPI(s) in terms of their relevance and materiality.¹¹⁶³ Written motivation for the SPT(s) should be provided in the context of how they meet the level of ambition, their consistency with the overall strategic planning and benchmark approach.¹¹⁶⁴ All disclosures must show the potential change of bond financial and/or structural characteristics and the possible trigger events leading to such a change.¹¹⁶⁵ Reporting post issuance and independent verification must be publicly communicated through all relevant platforms showing overall representation of the issuer's alignment with the SLBP.¹¹⁶⁶

KPI selection is critical to the credibility of the SLB market.¹¹⁶⁷ Selection affects the credibility of the market, to avoid proliferation, the issuer's sustainability performance is measured using sustainability KPIs that can be external or internal.¹¹⁶⁸ KPIs should be intricately linked to the issuer's core sustainability and business strategy.¹¹⁶⁹ They should address relevant material environmental, social and/or governance challenges of the industry sector and be under management's control.¹¹⁷⁰ KPI(s) could be linked to regulatory standards or taxonomies such as the EU Taxonomy of sustainable

¹¹⁶² ICMA 2020 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/June-2020/Sustainability-Linked-Bond-PrinciplesJune-2020-100620.pdf>.

¹¹⁶³ ICMA 2020 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/June-2020/Sustainability-Linked-Bond-PrinciplesJune-2020-100620.pdf>.

¹¹⁶⁴ ICMA 2020 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/June-2020/Sustainability-Linked-Bond-PrinciplesJune-2020-100620.pdf>.

¹¹⁶⁵ ICMA 2020 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/June-2020/Sustainability-Linked-Bond-PrinciplesJune-2020-100620.pdf>.

¹¹⁶⁶ ICMA 2020 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/June-2020/Sustainability-Linked-Bond-PrinciplesJune-2020-100620.pdf>.

¹¹⁶⁷ ICMA 2020 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/June-2020/Sustainability-Linked-Bond-PrinciplesJune-2020-100620.pdf>.

¹¹⁶⁸ ICMA 2020 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/June-2020/Sustainability-Linked-Bond-PrinciplesJune-2020-100620.pdf>.

¹¹⁶⁹ ICMA 2020 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/June-2020/Sustainability-Linked-Bond-PrinciplesJune-2020-100620.pdf>.

¹¹⁷⁰ ICMA 2020 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/June-2020/Sustainability-Linked-Bond-PrinciplesJune-2020-100620.pdf>.

activities or reference to goals and objectives set in the international agreements such as the *Paris Agreement* (countries' nationally determined contributions and the 1.5°C or 2°C temperature rise objectives) or the 2030 Agenda on Sustainable Development (Sustainable Development Goals).¹¹⁷¹

The Key Performance Indicators (KPI) as per ICMA should be (a) relevant, core and material to the issuer's overall business, and of high strategic significance to the issuer's current and/or future operations; (b) measurable or quantifiable on a consistent methodological basis; (c) externally verifiable; and (d) able to be benchmarked, that is as much as possible using an external reference or definitions to facilitate the assessment of the Sustainability Performance Targets level of ambition.¹¹⁷²

Historical performance of KPIs assists investors in evaluating performance. Reports should disclose these past KPIs in the annual reports and where not previously disclosed, issuers should to the extent possible, provide externally verified KPIs values covering at least the previous three years.¹¹⁷³ Rational and strategy to the process as this better informs the investor in the investment decision. KPIs should be provide clarity in definition and include scope or perimeter (e.g., the percentage of the issuer's total emissions to which the target is applicable); as well as the calculation methodology (e.g., clear definition of the denominator of intensity-based KPIs, definition of a baseline, where feasible, science-based or benchmarked against an industry standard (e.g., consider SMART philosophy specific, measurable, attainable, relevant and time bound)).¹¹⁷⁴

¹¹⁷¹ ICMA 2020 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/June-2020/Sustainability-Linked-Bond-PrinciplesJune-2020-100620.pdf>.

¹¹⁷² ICMA 2020 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/June-2020/Sustainability-Linked-Bond-PrinciplesJune-2020-100620.pdf>.

¹¹⁷³ ICMA 2020 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/June-2020/Sustainability-Linked-Bond-PrinciplesJune-2020-100620.pdf>.

¹¹⁷⁴ ICMA 2020 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/June-2020/Sustainability-Linked-Bond-PrinciplesJune-2020-100620.pdf>.

The Calibration of Sustainability Performance Targets (SPTs) is an expression of realistic levels of ambition the issuer is ready to commit to.¹¹⁷⁵ They must be set in good faith and disclose strategic information which may have a decisive impact on the achievement of the SPTs.¹¹⁷⁶ Ambition is important as it reveals the extent of the strategy is willing to go beyond the "Business as Usual" trajectory.¹¹⁷⁷ They need to where possible provide a benchmark or external reference and be consistent with the issuers' overall strategic sustainability/ESG strategy.¹¹⁷⁸ Realistic and congruent timelines must be set at the time of issuance with the bond.¹¹⁷⁹ Benchmarking the outcomes of the targets provides for forward looking guidance on the KPI(s) insight over a minimum of three years and such tracking provides data sets for future use.¹¹⁸⁰ Such data can be used by the issuer's peers in determining average performance, best-in class and comparative statistics within the industry.¹¹⁸¹ The target setting exercise should be benchmarked against scientific referencing for systematic science based scenarios or absolute levels and Best-Available Technologies or other proxies to determine relevant targets across environmental and social themes.¹¹⁸²

Issuers of SLB must disclose timelines for the achievement of the targets set, how such targets should be achieved within the context of their ESG strategy and such disclosure should be positioned within the context of the issuer's overarching objectives and policy and/or processes relating to the overall ESG strategy.¹¹⁸³

¹¹⁷⁵ ICMA 2020 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/June-2020/Sustainability-Linked-Bond-PrinciplesJune-2020-100620.pdf>.

¹¹⁷⁶ ICMA 2020 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/June-2020/Sustainability-Linked-Bond-PrinciplesJune-2020-100620.pdf>.

¹¹⁷⁷ ICMA 2020 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/June-2020/Sustainability-Linked-Bond-PrinciplesJune-2020-100620.pdf>.

¹¹⁷⁸ ICMA 2020 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/June-2020/Sustainability-Linked-Bond-PrinciplesJune-2020-100620.pdf>.

¹¹⁷⁹ ICMA 2020 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/June-2020/Sustainability-Linked-Bond-PrinciplesJune-2020-100620.pdf>.

¹¹⁸⁰ ICMA 2020 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/June-2020/Sustainability-Linked-Bond-PrinciplesJune-2020-100620.pdf>.

¹¹⁸¹ ICMA 2020 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/June-2020/Sustainability-Linked-Bond-PrinciplesJune-2020-100620.pdf>.

¹¹⁸² ICMA 2020 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/June-2020/Sustainability-Linked-Bond-PrinciplesJune-2020-100620.pdf>.

¹¹⁸³ ICMA 2020 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/June-2020/Sustainability-Linked-Bond-PrinciplesJune-2020-100620.pdf>.

Confirmation of alignment of the issued bond with the five core components of the SLBP is done by a Second Party Opinion similar to the Green Bond.

External review at the pre-issuance stage by Second Party Opinion is encouraged to assess the relevance, robustness and reliability of the KPIs.¹¹⁸⁴ External review makes assessment of the level of ambition of the proposed SPTs, the relevance and reliability of selected benchmarks and baselines and the credibility of the strategy outlined to achieve them based on scenario analyses, where relevant.¹¹⁸⁵ Assessment by external reviewers continues at the post issuance stage in the case of material change to perimeter and KPI methodology.¹¹⁸⁶ In the event where internal Second Party Opinion exists, the recommendation is that such internal expertise should be demonstrable or methodologies of internal expertise must be documented and communicated to investors.¹¹⁸⁷ Voluntary Guidelines for External Review is available and this should be used as it has shown to be useful for best practice.¹¹⁸⁸

SLB at their cornerstone are dependent on whether the selected KPI(s) reach (or not) predefined SPT(s), that is the SLB will need to include a financial and/or structural impact involving trigger event (s).¹¹⁸⁹ Coupon variability is one such example but it is also possible to consider the variation of other SLB's financial and/or structural characteristics.¹¹⁹⁰ Accountability is critical to the bonds integrity and therefore the variation of the bond financial and/or structural characteristics should be commensurate and meaningful relative to the issuer's original bond financial

¹¹⁸⁴ ICMA 2020 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/June-2020/Sustainability-Linked-Bond-PrinciplesJune-2020-100620.pdf>.

¹¹⁸⁵ ICMA 2020 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/June-2020/Sustainability-Linked-Bond-PrinciplesJune-2020-100620.pdf>.

¹¹⁸⁶ ICMA 2020 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/June-2020/Sustainability-Linked-Bond-PrinciplesJune-2020-100620.pdf>.

¹¹⁸⁷ ICMA 2020 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/June-2020/Sustainability-Linked-Bond-PrinciplesJune-2020-100620.pdf>.

¹¹⁸⁸ ICMA 2020 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/June-2020/Sustainability-Linked-Bond-PrinciplesJune-2020-100620.pdf>.

¹¹⁸⁹ ICMA 2020 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/June-2020/Sustainability-Linked-Bond-PrinciplesJune-2020-100620.pdf>.

¹¹⁹⁰ ICMA 2020 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/June-2020/Sustainability-Linked-Bond-PrinciplesJune-2020-100620.pdf>.

characteristics.¹¹⁹¹ Strict adherence to the KPI(s) definition and SPT(s) (including calculation methodologies) and the potential variation of the SLB's financial and/or structural characteristics are a necessary element of the bond documentation.¹¹⁹² Market sensitive information should be treated sensitively and in the case of any fallback mechanism in the case of the SPTs not being incalculable or observed in a satisfactory manner must be explained to investors.¹¹⁹³

Reporting should be published regularly, at least on an annual basis, and in the case of any date/period relevant for assessing the SPT performance leading to a potential adjustment of the SLB's financial and/or structural characteristics.¹¹⁹⁴ Records should be accessible and:

- up-to date information on the performance of the selected KPI(s), including baselines where relevant;
- a verification assurance report relative to the SPT outlining the performance against the SPTs and the related impact, and timing of such impact, on the bond's financial and/or structural characteristics; and
- any information enabling investors to monitor the level of ambition of the SPTs (e.g., any update in the issuers sustainability strategy or on the related KPI.ESG governance, and more generally any information relevant to the analysis of the KPIs and SPTs).¹¹⁹⁵

External and independent verification should be sought by issuers on their performance level against SPT for each KPI and such verification should be done by a qualified external reviewer with the relevant expertise.¹¹⁹⁶ Recommended external

¹¹⁹¹ ICMA 2020 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/June-2020/Sustainability-Linked-Bond-PrinciplesJune-2020-100620.pdf>.

¹¹⁹² ICMA 2020 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/June-2020/Sustainability-Linked-Bond-PrinciplesJune-2020-100620.pdf>.

¹¹⁹³ ICMA 2020 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/June-2020/Sustainability-Linked-Bond-PrinciplesJune-2020-100620.pdf>.

¹¹⁹⁴ ICMA 2020 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/June-2020/Sustainability-Linked-Bond-PrinciplesJune-2020-100620.pdf>.

¹¹⁹⁵ ICMA 2020 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/June-2020/Sustainability-Linked-Bond-PrinciplesJune-2020-100620.pdf>.

¹¹⁹⁶ ICMA 2020 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/June-2020/Sustainability-Linked-Bond-PrinciplesJune-2020-100620.pdf>.

reviewers are either auditors or environmental consultants who should perform such review at least once a year.¹¹⁹⁷ Verification by an independent and external reviewer should be made publicly available and post issuance verification is a necessary element of the SLBP.¹¹⁹⁸

Green bonds can be regarded as climate finance, and investable market instruments that support the transition to a low carbon and climate resilient economy. They attempt to shift a significant portion of the investable funds into climate change mitigation and adaptation. Climate change has been critical in the emergence of green bonds in particular as a market response to the impacts of climate change. Green Bonds were initially largely unregulated, their exponential growth through the market has seen them evolve from a nascent market instrument to a significant market mechanism now regulated with credibility and integrity, and often oversubscribed by investors. Voluntary Guidelines and Standards have been the main reason for this growth. A broad category of environmental aspects aligned with sustainable development such as renewable energy and energy efficiency have been identified as beneficiaries of the use of proceeds. The universal acceptance of the GBP has seen an explosion of investor demand requiring the alignment of green projects with ESG elements. The Use of Proceeds has seen the mobilization of Green capital towards infrastructure investment which to reiterate connects investors with green projects raising awareness around green project pipelines.

3.7 Conclusion

The international climate change regime is driven by the United Nations Framework Convention on Climate Change (UNFCCC) *Kyoto Protocol* and the *Paris Agreement*, all of which acknowledge the allocation of resources and support for technology transfer as critical in achieving the ultimate objective of the convention which is that

¹¹⁹⁷ ICMA 2020 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/June-2020/Sustainability-Linked-Bond-PrinciplesJune-2020-100620.pdf>.

¹¹⁹⁸ ICMA 2020 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/June-2020/Sustainability-Linked-Bond-PrinciplesJune-2020-100620.pdf>.

of stabilisation of GHG concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference in the climate system.

Regional bodies such as the EU and AU have formulated guidelines and standards some of which are binding such as the listing requirements of green bonds and some which are voluntary and non-binding. Non-adherence to the guidelines, however, may lead to reputational harm, thereby struggling to issue any future green bonds. This can be viewed as market self-regulation enforced by Second Party Opinion and Verification. All regional bodies are in agreement of reduction of emissions and this is seen in the NDCs. Developing countries are going to need substantial financial mobilisation to be able to meet their objectives as well as meeting their mitigation and adaptation strategies.

ESG integration into investment decision-making internationally has become a critical component of the investment decision. Supported by the UN PRI, ESG outcomes are forward-looking and provide a platform for investor led initiatives that finance projects aligned with climate change mitigation. Investors concerned by climate change are making their investment decisions primarily concerned by boards lack of ESG integration into their decision making. They are increasing their stewardship activities in the investment decisions of boards and corporations so as to drive ESG into the operations of companies and requiring greater alignment with the objectives of the *Paris Agreement*. Board members have the responsibility to drive ESG criteria in the operations of companies and they can be held to account by investors to these values. The transition to a low carbon economy is critical to investors, aware that climate change impacts are having a devastating effect on global investments.

Climate change has required realignment of financial flows in attaining the objectives of the *Paris Agreement* and the emergence of green bonds as a climate aligned financial mechanism has given optimism to the financing of sustainable economies. Green bonds can be regarded as part of the climate finance architecture because both direct finance towards low-carbon and climate-resilient development. Green bonds as a direct emergence of the climate change response, financing green or climate change initiatives or activities. The proceeds of green bonds finance

mitigation and adaptation infrastructure and projects with most proceeds financing mitigation projects in the form of renewable energy infrastructure. Multilateral and development finance institutions have issued over forty per cent of the green bonds on the market supporting action in the development of low carbon infrastructure and the transition to low carbon economies.

Green bonds generally consist of four components in the raising of financing from the debt market and these components are the Use of Proceeds, Process for project evaluation, Management of Proceeds and Reporting. They must comply with the international standards as set by the ICMA GBP and the CBS. Green bonds have the capability of mobilizing the debt capital market to finance the transition to low carbon economies and finance low carbon infrastructure.

Guidelines and Standards were introduced with the aim of providing best practice methodologies, transparency and reliable data analytics for growth of the market. Standardisation of best practice tools and methodologies have allowed for acceptance of internationally understood and enforceable guidelines and principles. Green Bonds are primarily based on the GBP, the former Climate Bonds 2.0, the Climate Bonds Standard 3.0, and the recently draft ISO 14030-1:2020 Standard. These are the globally accepted Principles and Standards that will enable trust, assurance and market integrity for the investment of assets that support the transition to a low carbon and climate resilient economy.

Climate Bonds Standards have the following in common with the GBP, they both aim to provide the green bond market with the trust and assurance that it needs to achieve scale. Both guidelines and standards promote integrity through the recommendations made and foster transparency, disclosure and regular reporting. Green labelling is critical, as they both provide guidance on this aspect. The use of funds towards projects aligned to the *Paris Agreement* is a common denominator which is aimed at transitioning issuers and investors alike towards environmental sustainability. Investors trust the investable opportunity that is aligned with green credentials and the transparency and the screening and scientific rigour that underpins the process that goes into green bonds under the GBP or CBS.

They differ in respect of the added Certification process that the CBS offers to investors. According to the Climate Bonds Standard Secretariat, the:

Certification relates exclusively to the climate attributes of the bond, loan or other debt instrument, and does not address any other aspects of investment decision making such as compliance with national or international laws and/or regulations, broader Environment, Social and Governance (ESG) attributes, or creditworthiness.¹¹⁹⁹

Whilst the CBS provides certification this only serves to align the Certified bonds with the GBP and other aligned standards such as the Green Loan Principles, ASEAN Green Bond Standards, the proposed EU Green Bond Standards, Japan's Green Bond Guidelines and India's Disclosure and Listing Requirements for Green Bonds.¹²⁰⁰

It seems that an ideal green bond standard would include the following: the globally accepted standards and guidelines of the GBP and the CBS Standards and Certification. However, because Green Bonds are evolving it may be prudent to incorporate the necessary elements that protect the integrity and the transparency that underpins them in each jurisdiction where they are issued. Regional or National variations of green projects should be allowed in the view of the author as a way of long-term strategic planning to financing more green projects, this will eventually lead to a mainstreaming process of the green projects filtering out "brown projects". Green Bonds issuance has arisen with great enthusiasm by the market despite the different market and listing requirements. A track and trace system of each approved green project should be incorporated into the standard as a safeguard to ensure that Green Bonds are financing green projects and affirming the quarterly reporting system. The basis of this has been that all Green Bonds are underpinned by accepted standards and guidelines that incorporate the domestic law.

¹¹⁹⁹ CBI 2019 file:///C:/Users/p10180869/Downloads/CBI_Climate_bonds_standard.pdf 4.

¹²⁰⁰ CBI 2019 file:///C:/Users/p10180869/Downloads/CBI_Climate_bonds_standard.pdf 4.

Chapter 4

South Africa

4.1 Introduction

Chapter three analysed best practices and standards (GBP, the Climate Bonds Standard 3.0 and the Draft ISO Standard 14030) at the international level that could be used to inform the South African legal framework. The aim of this chapter is to analyse the South African legislation and policy against these best practices in order to determine gaps or deficiencies in the governing or regulation of green bonds as driver for environmentally responsible investment in the energy sector. In order to reach this aim, the policy and legislation will be analysed in relation to (a) the climate change legal framework to determine if it provides for climate change mitigation and financing; and (b) the legal framework to determine if it provides an enabling environment for green bonds in South Africa. The the *Constitution of the Republic of South Africa*, 1996 and the *National Environment Management Act* 107 of 1998 (NEMA) provide the overarching framework for environmental protection in South Africa. In terms of policies, the *National Climate Change Green Paper* 2010, the *National Climate Change Response White Paper* 2011, the National Development Plan, *Climate Change Bill* 2018, Integrated Resource Plan 2010-2030 and the *White Paper on Renewable Energy Policy of the Republic of South Africa*, 2003 will be discussed to determine whether they address climate change mitigation and climate financing. South Africa's Intended Nationally Determined Contribution (INDC) will also be referred to. In terms of legislation the NEM:AQA, *National Climate Change Bill* 2018 and the *Carbon Tax Act* 15 of 2019 will be discussed to determine if they provide opportunities to introduce climate financing in South Africa.

South Africa does not have dedicated legislation pertaining to green bonds, except the Johannesburg Stock Exchange Green Bond Segment Debt Listing Requirements. Other legislation that may provide enabling provisions that could be used to introduce green bonds, such as the *Financial Markets Act* 19 of 2012 (FMA); the *Pension Funds Act* 24 of 1956; the *Taxation Laws Amendment Act* 17 of 2009 and local government

legislation will be discussed. The Johannesburg Stock Exchange Green Bond Segment Debt Listing Requirements Section 6.10 will be analysed in more detail.

In this chapter the climate change legal instruments that outline the mandate for mitigation, the national intended contribution objective and the specific mitigation mechanisms (of which climate finance is one) will be discussed first. This will be followed by a discussion of the South African legal framework pertaining to green bonds. The chapter will finally assess in light of the international best practices where South African law can be improved. Chapter 5 will investigate foreign jurisdictions that could provide lessons for South Africa in this regard.

4.2 Climate change legal framework: mandate for climate change mitigation

4.2.1 Policy and legal drivers for green bonds

The Constitution and the NEMA are discussed as a general framework for the environment and developments in energy, followed by policy and legislation.

4.2.2 Constitution of the Republic of South Africa, 1996

In terms of section 24¹²⁰¹ of the Constitution, sustainable development is entrenched and is to be promoted. Section 24(a) applies to everyone with general application.¹²⁰² Its negative phrasing would include that people would be entitled to an environment that is not impacting or their health and well-being. There is enough literature to suggest that climate change already has these impacts.¹²⁰³ Section 24(b) contains

¹²⁰¹ "Everyone has the right-

- (a) To an environment that is not harmful to their health or wellbeing; 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."

¹²⁰² Kotzé 2003 *PELJ* 81; Feris 2010 *PELJ* 77; Du Plessis 2010 *Stell LR* 270.

¹²⁰³ See, for example, Pasquini *et al* 2020 *Science of the Total Environment* 747; Linares *et al* 2020 *Environmental Research* 109107; Rankoana 2020 *IJCCSM* 587-598; Akhtar and Palagiano (eds) *Climate change and air pollution*.

directives and principles resembling a socio-economic right that imposes duties on the state to protect the environment for present and future generations through reasonable legislative and other measures inferring that the burden is upon the state to do so.¹²⁰⁴ The state in terms of the second part is mandated to take certain measures in order to realise the guarantee proclaimed in section 24(a).¹²⁰⁵ The Constitution recognises the direct correlation between the regulation of environmental protection and the promotion of sustainable development.¹²⁰⁶ Sustainable development is to be viewed within the paradigm of the improvement of people's lives.¹²⁰⁷ This requires balancing developmental issues with those of environmental conservation and environmental protection, amongst others.¹²⁰⁸

In understanding sustainable development as an integrated concept one needs to make a distinction between sustainability and development as separate entities.¹²⁰⁹ Kotzé makes the distinction by defining sustainability as maintaining a desired condition over time, without eroding natural, social or financial resources.¹²¹⁰ Sustainability is therefore seen as an ultimate goal, achievable through development.¹²¹¹ Development is a process and not a goal, but in that process work towards achieving the goal.¹²¹² These two concepts in this regard can therefore not be separated.¹²¹³ Any legislation or policy directed at climate change matters, will

¹²⁰⁴ Kotzé 2003 *PELJ* 81; in *Government of the Republic of South Africa v Grootboom* 2001 1 SA 46 (CC) para 42 Yacoob J stated, "The State is required to take reasonable legislative and other measures. Legislative measures by themselves are not likely to constitute constitutional compliance. Mere legislation is not enough. The State is obliged to achieve the intended result, and the legislative measures will invariably have to be supported by appropriate, well-directed policies and programmes implemented by the Executive. These policies and programmes must be reasonable in their conception and their implementation. The formulation of a programme is only the first stage in meeting the State's obligation. An otherwise reasonable program that is not implemented reasonably will not constitute compliance with the State's obligation".

¹²⁰⁵ Feris 2010 *PELJ* 77.

¹²⁰⁶ Barnard 2012 *PELJ* 223.

¹²⁰⁷ Kotzé 2003 *PELJ* 82.

¹²⁰⁸ Kotzé 2003 *PELJ* 81; Barnard *PELJ* 2012 223.

¹²⁰⁹ Kotzé 2003 *PELJ* 86.

¹²¹⁰ Kotzé 2003 *PELJ* 86.

¹²¹¹ Kotzé 2003 *PELJ* 86. See *Fuel Retailers Association of Southern Africa v Director General: Environmental Management, Mpumalanga Province* 2007 10 BCLR 1059 (CC); also see 2015 *SAJELP* that was dedicated to deliberate on this case.

¹²¹² Kotzé 2003 *PELJ* 86.

¹²¹³ Kotzé 2003 *PELJ* 86.

also have to give effect to sustainable development.¹²¹⁴ The context of the application of sustainable development in South Africa emanates from the

... enhancement of human well-being and quality of life for all time, in particular those most affected by poverty and inequality, at the core of which is resource use efficiency and intergenerational equity.¹²¹⁵

Section 24 further raises environmental care to the "higher", more enduring constitutional level.¹²¹⁶ This right places a positive duty on the government to secure environmental quality which is not harmful to peoples' health and well-being, and to protect the environment for present and future generations through legislative and other measures,¹²¹⁷ which is not defined and could possibly include extra legal measures.¹²¹⁸ It can be argued that such measures could, for example, include financial mechanisms to achieve the goals of sustainable development and ultimately sustainability also in relation to climate change.

Section 7(2) of the Constitution further states that the "state must respect, protect, promote and fulfil the rights in the Bill of Rights".¹²¹⁹ The measures available in the protection of the environment must be measures that prevent pollution and ecological degradation; promote conservation; and secure ecologically sustainable development as stated in section 24(b).¹²²⁰ The environmental right as a concept has drawn

¹²¹⁴ Du Plessis and Kotzé 2014 *JAL* 155.

¹²¹⁵ Internationally sustainable development has evolved through hard and soft law instruments. Sustainable development is more imperative in the modern world than when it was initially developed, climate change has brought it to the fore of all development especially in the developing world. In South Africa the initiating and upscaling of actions to achieve sustainable development as an ongoing process was catapulted by the 1992 Rio Earth Summit and the 2002 Johannesburg World Summit on Sustainable Development. DEA 2016 <http://www.dhs.gov.za/sites/default/files/u19/SA%20Govt%20Flagships%20Human%20Settlements%20Roundtable%2029%20May%202019.pdf> 5. South Africa developed a National Framework on Sustainable Development (NFSD) to enunciate the countries vision for sustainable development and indicate strategic interventions to re-orientate South Africa's development path in a more sustainable direction, see DEAT 2016 <https://www.ecolex.org/details/literature/people-planet-prosperity-a-national-framework-for-sustainable-development-in-south-africa-mon-083605/> 3. This plan was aimed at promoting the effective stewardship of South Africa's natural, social and economic resources (DEA 2016 <http://www.dhs.gov.za/sites/default/files/u19/SA%20Govt%20Flagships%20Human%20Settlements%20Roundtable%2029%20May%202019.pdf> 5).

¹²¹⁶ Du Plessis and Kotzé 2014 *JAL* 154.

¹²¹⁷ Du Plessis and Kotzé 2014 *JAL* 154.

¹²¹⁸ Du Plessis and Kotzé 2014 *JAL* 154; Feris 2008 *SAJHR* 35.

¹²¹⁹ Feris 2008 *SAJHR* 34.

¹²²⁰ Du Plessis and Kotzé 2014 *JAL* 154.

criticism as to what it entails and various view-points have been advanced. There are two central views, of which the biocentric or ecocentric and the anthropocentric views are the most prominent.¹²²¹ In the biocentric understanding of the environment, its intrinsic value entitles it to an existence regardless of human beings and this view emphasises the interrelationship and interdependence of animal and plant life systems.¹²²² The anthropocentric view, emphasises the status of humans in the natural hierarchy regarding care for the earth.¹²²³ The earth it is believed should be preserved for a variety of reasons related to human interests.¹²²⁴ These human interests include serving as a stockpile of genetic diversity for agricultural, medical and other purposes, and as material for scientific study, recreation, aesthetic enjoyment, economic development and spiritual inspiration.¹²²⁵ A biocentric view may militate against measures that contributes to climate change, while an anthropocentric view may laud such actions as contributions to people's well-being, ensuring economic development and create job opportunities, amongst others.¹²²⁶ A positive interpretation of both the biocentric and anthropocentric views could also promote measures that address climate change or that assist in introducing measures that could lessen the impact of climate change, for example, by the use of renewable energy.¹²²⁷

In South African environmental law, the environmental right has been enforced against natural or juristic persons in the courts and through this process of judicial

¹²²¹ Feris 2008 *SAJHR* 30.

¹²²² Feris 2008 *SAJHR* 30.

¹²²³ Feris 2008 *SAJHR* 30.

¹²²⁴ Feris 2008 *SAJHR* 30.

¹²²⁵ Feris 2008 *SAJHR* 30.

¹²²⁶ See, for example, McShane 2016 *Midwest Studies in Philosophy* 189-204; Reid *Climate Change and Human Development*.

¹²²⁷ The National Framework for Sustainable Development indicates the multiple challenges of introducing an effective sustainable development strategy including gaps that affect progress, performance and delivery. This leads to tensions and institutional problems, some of these gaps are related to greater efficiency of resource use, reversal of biodiversity degradation and identifying appropriate "quick win" projects that focus on responding to the immediate crosscutting challenges in respect of climate change - DEAT 2008 <https://www.ecolex.org/details/literature/people-planet-prosperity-a-national-framework-for-sustainable-development-in-south-africa-mon-083605/> 30. Also see Du Plessis and Kotzé 2020 *Environmental Law* 615-663; Murombo 2015 *JENR* 320-348; Murombo 2016 *JWELB* 142-165.

review the courts have been able to provide content to the right.¹²²⁸ The Constitutional Court in 2007 commented and extended the scope of application of the environmental right by explaining the interrelationship between the environment and development as:

The Constitution recognizes the interrelationship between the environment and development; indeed, it recognizes the need for the protection of the environment while at the same time it recognizes the need for social and economic development. It contemplates the integration of environmental protection and socio-economic development. It envisages that environmental considerations will be balanced with socio-economic development. It envisages that environmental considerations will be balanced with socio-economic considerations through the ideal of sustainable development. This is apparent from section 24(b)(iii) which provides that the environment will be protected by securing 'ecologically sustainable development and the use of natural resources while promoting justifiable economic and social development'. Sustainable development and sustainable use and exploitation of natural resources are the core of the protection of the environment.¹²²⁹

The Constitutional Court in *Bato Star Fishing (Pty) Ltd v Minister of Environmental Affairs and Tourism* stated that:

A court should not rubber-stamp an unreasonable decision simply because of the complexity of the decision or the identity of the decision-maker.¹²³⁰

Such an argument would apply should the courts have to decide whether for example climate change considerations should be taken into account.

The case of *BP Southern Africa (Pty) Ltd v MEC for Agriculture, Conservation, Environment and Land Affairs*¹²³¹ recognised the principle of integration between the three pillars of environmental protection, economic development and social needs as forming the core elements of sustainable development. The court explored the concept of sustainable development and considered a wider definition of the meaning of "environment" which was employed by the initial *Environment Conservation Act* 73 of 1989 (ECA) which defined it as "the aggregate of surrounding objects,

¹²²⁸ Feris 2008 *SAJHR* 38. See for example, *Fuel Retailers Association of Southern Africa v Director-General: Environmental Management, Department of Agriculture, Conservation and Environment, Mpumalanga Province and Others* 2007 (6) SA 4 (CC).

¹²²⁹ Du Plessis and Nel "An Introduction" 3-39.

¹²³⁰ 2004 4 SA 490 (CC); also see Feris 2008 *SAJHR* 38.

¹²³¹ 2004 5 SA 124 (W).

conditions and influences that influence the life and habits of man or any other organism or collection of organisms".¹²³² According to the court, the broad definition of "environment" would include all conditions and influences affecting the life and habits of man, which would also include socio-economic conditions and influences. The court found that under section 24(b) of the Constitution, the department was obliged to develop an integrated environmental management programme, which took cognisance of a wide spectrum of considerations, including international conventions and approaches as a result of the broad and extensive definition of "environment" in ECA, which *inter alia*, includes the consideration of socio-economic conditions.¹²³³

In further development of the sustainable development concept in South African law, the *Fuel Retailers Association of Southern Africa v Director General Environmental Management, Department of Agriculture, Conservation and Environment, Mpumalanga Province*¹²³⁴ was a case in which the applicant challenged the provincial authorities' decision to grant an environmental authorisation for the construction of a proposed filling station. Similarly, to the BP case the applicant contended that the authorities had failed to consider the socio-economic impact of the development.¹²³⁵ The court emphasised the importance of the interconnectedness of environmental, social and economic considerations within the context of sustainable development and stated that:

The Constitution recognizes the interrelationship between the environment and development; indeed, it recognizes the need for the protection of the environment whilst at the same time it recognizes the need for social and economic development. It envisages that environmental considerations will be balanced with socio-economic considerations through the ideal of sustainable development.¹²³⁶

¹²³² Feris 2008 *SAJHR* 40.

¹²³³ Section 1 of the NEMA defines "environment" differently but still includes the biophysical environment and the human environment – See in this regard Kidd 2010 *PELJ* 27-46; Glazewski "Environmental Law in South Africa"; Nel and Alberts "Environmental Management and Environmental Law in South Africa: An Introduction" 1-55.

¹²³⁴ 2007 6 SA 4 (CC) (7 June 2007).

¹²³⁵ Feris 2008 *SAJHR* 41.

¹²³⁶ 2007 6 SA 4 (CC) (7 June 2007) para 45.

The only case that dealt with climate change, is the case of *Earthlife Africa Johannesburg v Minister of Environmental Affairs*.¹²³⁷ In this case the court ordered that the then Minister of Environmental Affairs requested a climate change impact assessment for a power station. The court read into section 24O of the NEMA that government can no longer ignore climate change and that it is one of the environmental considerations that need to be taken into account. The case dealt with environmental impact assessment and financial considerations were not at issue.

The interpretation of section 24 as well as the framework legislation¹²³⁸ NEMA that gives effect to this right, indicates that the right is open to various interpretations, and it is also possible to address climate change issues. As stated above, other measures may include climate financing or measures such as green bonds to give effect to section 24.¹²³⁹ Such measures will have to promote sustainable development as well as ensure that in decisions regarding the introduction of such measures (or the projects flowing from the finance) environmental, social and environmental issues are balanced. This case ties in with the aim of this chapter in that in achieving the protection of the environmental right there must be due consideration of international best practices and guidelines and these must be aligned with the dual integration of environmental and socio-economic development. The precautionary and preventative principles should underscore all environmental impact assessments and therefore climate change considerations should always be critical to the assessments as they pose considerable risk to sustainable development.

¹²³⁷ [2017] 2 All SA 519 (GP).

¹²³⁸ Nel and Du Plessis 2001 *SAJELP* 2.

¹²³⁹ It can be said that s 24 of the Constitution similarly to the Draft BS ISO14030 seeks to "promote and reduce negative environmental impacts to the environment" - Draft BS ISO14030 v. See para 3.6.5 above.

4.2.3 *National Environment Management Act 107 of 1998 (NEMA)*

As stated in the previous paragraph the NEMA gives effect to section 24 of the Constitution.¹²⁴⁰ NEMA formulates principles¹²⁴¹ of sustainable development¹²⁴² that have to be taken into account in government's decision-making on matters affecting the environment.¹²⁴³ The principles include, amongst others, that the use of natural resources must be in a manner that prevents pollution and ecological degradation; promote conservation; and secures ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.¹²⁴⁴ Section 2(4)(a) establishes principles that need to be considered so as not to significantly affect the environment and requires, amongst others, that:

- (i) the disturbance of ecosystems and loss of biological diversity are avoided, or where they cannot be altogether avoided, are minimised and are remedied;
- (ii) that pollution and degradation of the environment are avoided, or, where they cannot be altogether avoided, are minimised and remedied;
- (v) that the use and exploitation of non-renewable natural resources is responsible and equitable, and takes into account the consequences of the depletion of the resource;
- (vi) that the development, use and exploitation of renewable resources and the ecosystems of which they are part do not exceed the level beyond which their integrity is jeopardized;
- (vii) that a risk-averse and cautious approach is applied, which takes into account the limits of current knowledge about the consequences of decisions and actions; and

¹²⁴⁰ NEMA Preamble.

¹²⁴¹ Section 2, also see Feris 2010 *PELJ* 80.

¹²⁴² Defined in s 1 of the NEMA as "sustainable development requires the integration of social, economic and environmental factors in the planning, implementation and evaluation of decisions to ensure that development serves present and future generations". It is the first formal attempt at defining sustainable development in South African legislation, see Kotzé 2003 *PELJ* 87.

¹²⁴³ Section 2(1) of the NEMA. The Principles set out in the Act apply to the actions of all organs of state that may significantly affect the environment.

¹²⁴⁴ Section 2(3). The principles contained in s of NEMA elevate the principle of sustainable development and accentuate sustainable development as critical to all environmental development. Sustainable development does not happen in isolation of other integral factors but rather is a consideration of various linked elements to achieving sustainable development that does not harm the environment. The principles, as stated by Kotzé expand on the nature, ambit and objective of sustainability and related concepts – See Kotzé 2008 *Tilburg LREL* 309.

- (viii) that negative impacts on the environment and on people's environmental rights be anticipated and prevented, and where they cannot be altogether prevented, are minimised and remedied.¹²⁴⁵

NEMA does not mention climate change as such, neither does it provide for financial mechanisms. However, the use of financial instruments to promote and develop environmental objectives is an innovative method which is to be encouraged. In mainstreaming environmental management in NEMA, the Minister may, with a view to promoting or facilitating integrated, environmentally sustainable and sound management provide for sector-based instruments and such instruments provide for the:

- integration of environmental considerations into decision-making;
- the implementation of best environmental practice;
- promotion of progressive adoption of environmentally sound technology; or
- promoting sustainable consumption and production, including, where appropriate, eco-endorsement or labelling.¹²⁴⁶

The Minister may consider such instrument as appropriate, engage with the organisation or sector concerned, as the case may be, on the content and use of its instrument if the organisation or sector concerned, as the case may be, requires the Minister to endorse or approve such instrument.¹²⁴⁷ This could, for example, allow for innovative instruments such as green bonds to be used to finance environmental objectives and develop low-carbon infrastructure. The green bond market can be said to meet the general principles and objectives of NEMA of being socially, environmentally and economically sustainable as an ecological finance instrument.¹²⁴⁸

A positive approach would envisage the use of financial instruments as being a major catalyst for the implementation of NEMA principles and objectives and green bonds

¹²⁴⁵ On an interpretation of the principles, see Kidd *Environmental Law*; Glazewski *Environmental Law*.

¹²⁴⁶ NEMA s 23A(2)(a)-(d).

¹²⁴⁷ Section 23A(3)(a) of the NEMA

¹²⁴⁸ The Minister may where the Republic is not bound by an international environmental instrument, make recommendations to Cabinet and Parliament regarding accession to and ratification of an international environmental instrument, which may deal with benefits to the Republic. As such international instruments related to green bonds could be aligned with NEMA objectives and principles – s 25(3) of the NEMA.

could be aligned therewith. In principle therefore, it would be possible to develop a new environmental management instrument in terms of section 23A. Environmental management instruments include, for example, market based instruments, such as green financing, climate financing and others.¹²⁴⁹ The argument will be to convince the relevant stakeholders to make use of the NEMA to introduce such measures. It may also be that other legislation, such as the *Climate Change Bill* 2018 may be more appropriate as will be discussed in the following paragraphs.

4.2.4 *White Papers on energy and renewable energy*

In 1998 the *White Paper on the Energy Policy* of the Republic of South Africa of 1998 was published followed by the *White Paper on Renewable Energy Policy* of the Republic of South Africa, 2003. These *White Papers* set the policy framework for energy in South Africa.

The *White Paper* of 1998 is the first policy document drafted in terms of section 24 of the Constitution.¹²⁵⁰ It promotes sustainable development by giving effect to the sustainable use of natural resources as provided by section 24 of the Constitution as well as the principle of equity.¹²⁵¹ The *White Paper* promotes the use of renewable energy as being accessible and affordable as well as making a contribution towards sustainable development.¹²⁵² An equitable level of national resources must accordingly be invested in renewable technologies.¹²⁵³

The *White Paper on Renewable Energy Policy of the Republic of South Africa*, 2003 recognised government needs to make its "due contribution" to the "global effort to

¹²⁴⁹ On environmental management instruments, see Nel and Alberts "Environmental management and Environmental Law in South Africa: An introduction" 1-55; Nel, Du Plessis and Du Plessis "Instrumentation for local environmental governance" 91-166.

¹²⁵⁰ Barnard 2012 *PELJ* 224.

¹²⁵¹ Barnard 2012 *PELJ* 224.

¹²⁵² Barnard 2012 *PELJ* 208. The *White Paper* as a policy makes some key concessions about the process of policy formulation which it acknowledges should take into consideration the country-specific social, environmental and economic factors as part of that formulation (Barnard 209).

¹²⁵³ Paragraph 7.7 of the *White Paper*.

mitigate GHG emissions" although at the time South Africa as a Non-Annex I country was not obligated to set binding targets.¹²⁵⁴

The vision of the *White Paper* identifies renewable energy as being part of the energy economy and this vision states that:

An energy economy in which modern renewable energy increases its share of energy consumed and provides affordable access to energy throughout South Africa, thus contributing to sustainable development and environmental conservation.¹²⁵⁵

The purpose of the *White Paper* is to strategically develop renewable energy resources systematically, introduce the optimal use of financial resources for the development of renewable energy resources, with the "specific emphasis on ensuring that the global climate change resources and other financial resources are accessed to facilitate its implementation".¹²⁵⁶ The long-term goal of the use of renewable energy is the:

... establishment of a sustainable renewable energy industry with an equitable BEE share and job market that will offer in future years a fully sustainable, non-subsidised alternative to fossil fuel dependence.¹²⁵⁷

According to the *White Paper*, sustainable development is only possible with an energy source that is distributed to its citizens at an affordable price and an energy source cognisant of environmental issues. To meet governments' obligations in terms of section 24 of the Constitution, the *White Paper on Energy Policy* 2003 states that: "Government will work towards the establishment and acceptance of broad targets for the reduction of energy related emissions that are harmful to the environment and to human health".¹²⁵⁸ The mitigation of fossil fuels through the implementation of renewable energy is contributory towards this objective, therefore the reduction of emissions and such cost savings can be redirected towards the financial resources

¹²⁵⁴ Kotzé, Humby, Rumble and Gilder "Climate Change Litigation" 1-11.

¹²⁵⁵ *Renewable Energy White Paper* 1.

¹²⁵⁶ *Renewable Energy White Paper* 2.

¹²⁵⁷ *Renewable Energy White Paper* 3.

¹²⁵⁸ *White Paper on Renewable Energy* 6.

required in stimulating sustainable development growth.¹²⁵⁹ The monitoring of renewable energy worldwide and the technological developments, in particular those technologies that are appropriate for South Africa, will be identified for purposes of creating partnerships locally for the benefit of South Africa.¹²⁶⁰

The *White Paper on Renewable Energy* in alignment with international standards and guidelines will carry out the monitoring, auditing and review of related energy policy and policy implementation.¹²⁶¹ A review process of the energy target as set out in the *White Paper* will be periodically scrutinised with respect to primary energy carriers, and the modalities of the various financial, legal and regulatory instruments to be employed as part of the enabling framework of mechanisms to support the promotion of renewable energy will also inform the review process so as to show the potential to provide acceptable social and environmental and financial returns.¹²⁶²

4.2.5 National Climate Change Green Paper 2010

The *National Climate Change Green Paper 2010* followed the language of the international climate change negotiations with the inclusion of principles such as "peak, plateau and decline".¹²⁶³ Guided by international principles such as the principle of common but differentiated responsibility and respective capabilities, the precautionary principle, the polluter pays principle, a people-centred approach, informed participation and inter-generational rights, the *Green Paper* was able to articulate that to contribute its fair share of climate change mitigation as committed in Copenhagen of reducing GHG emissions by 34 % by 2020 and 42 % by 2025 below business as usual, South Africa would need the necessary finance, technology and support from the international community to achieve this objective.¹²⁶⁴ The climate change response strategy was able to determine that "the use of incentives and disincentives, including through regulation and the use of economic and fiscal

¹²⁵⁹ *White Paper on Renewable Energy* x.

¹²⁶⁰ *White Paper on Renewable Energy* 43.

¹²⁶¹ *White Paper on Renewable Energy* 42.

¹²⁶² *White Paper on Renewable Energy* 43.

¹²⁶³ *National Climate Change Green Paper 2010*, 6.

¹²⁶⁴ *National Climate Change Green Paper 2010*, 6.

measures to promote behaviour change that would support the transition to a low carbon society and economy", would be important in financing renewable energy projects to achieve the trajectory of "peak, plateau and decline".¹²⁶⁵ Government in the *Green Paper* then committed to undertake work to determine the economic and fiscal costs and benefits of the Proposed Climate Change Response Strategy.¹²⁶⁶ The government acknowledged that South Africa would need to "heavily invest" in the development of a low carbon growth path, as well as being proactive in its approach towards the impacts of climate change.¹²⁶⁷ South Africa's response recognised an early and decisive action in the mobilisation of resources necessary to address mitigation.¹²⁶⁸

Domestic resource mobilisation was to be initiated from a range of resources and whilst green bonds were not specifically mentioned they could have been one such mechanism available especially in light of the fact that government did consider establishing a National Climate Change Fund.¹²⁶⁹ The private and public sectors were increasingly becoming aware of climate change impacts and government sought to actively engage them in providing financial solutions.¹²⁷⁰ The *Green Paper* similar to some of the proposed and current international standards and guidelines found it prudent that monitoring, evaluation and reporting form an integral part of finding solutions to climate change.¹²⁷¹ The climate change mitigation interventions which were to be informed by and monitored against the peak, plateau and decline trajectory were as follows:

- South Africa's greenhouse gas emissions peak in 2020 to 2025 at 34% and 42% respectively below a business-as-usual baseline.

¹²⁶⁵ *National Climate Change Green Paper* 2010, 7.

¹²⁶⁶ *National Climate Change Green Paper* 2010, 33.

¹²⁶⁷ *National Climate Change Green Paper* 2010, 32.

¹²⁶⁸ *National Climate Change Green Paper* 2010, 33.

¹²⁶⁹ *National Climate Change Green Paper* 2010, 33.

¹²⁷⁰ *National Climate Change Green Paper* 2010, 38.

¹²⁷¹ *National Climate Change Green Paper* 2010, 37.

- South Africa's greenhouse gas emissions plateau from peak in 2020 to 2035 South Africa's greenhouse gas emissions begin declining in absolute terms from plateau levels from 2036 onwards.¹²⁷²

The ambitious trajectory was to be contextualised in the framework of South Africa being an energy intensive and coal dependent country. Therefore international finance, suggesting large scale finance, was required for the transition to a less carbon intensive economy and critical in achieving such a trajectory.¹²⁷³ In terms of response monitoring, South Africa was to measure its efficacy of response interventions by "designing and publishing a draft Climate Change Response Monitoring, Reporting and Verification (MRV) System that met South Africa's requirements for response monitoring whilst aligning with evolving international MRV requirements".¹²⁷⁴ Therefore, South Africa according to the *Green Paper* was to "develop, test and commission a web-based greenhouse gas emission reporting system as part of the National Atmospheric Emission Inventory component of the South African Air Quality Information System by 2012". Other requirements were the creation of a data base on to the National Atmospheric Emission Inventory made by significant emitters, the publication of annual reports comparing actual GHG emissions against the emission trajectory by 2014¹²⁷⁵ and a register was to be kept of climate actions that resulted in mitigation of GHG as well as the measurement of progress made against the overall GHG emission trajectory and national targets.¹²⁷⁶

¹²⁷² *National Climate Change Green Paper* 2010, 38.

¹²⁷³ *National Climate Change Green Paper* 2010, 38.

¹²⁷⁴ *National Climate Change Green Paper* 2010, 36.

¹²⁷⁵ *National Climate Change Green Paper* 2010, 38. This was achieved and a database was created - Department of Environment, Forestry and Fisheries 2021 https://saaelip.environment.gov.za/SAAELIP/SAAELIP_FACILITY/GovEnt/Shared/Pages/Main/Login.aspx. Reporting is to be done in terms of the NEM:AQA Regulations: National Greenhouse Gas Emission Reporting – GN R994 in GG 43712 of 11 September 2020. South Africa also regularly reports on its greenhouse gas emissions. See also DEA 2014 https://www.environment.gov.za/sites/default/files/docs/greenhousegas_inventoriesouthafrica.pdf. Also see "National Environmental Management: Air Quality Act: Draft 7th National Greenhouse Gas Inventory Report for the Republic of South Africa" – GN 989 in GG 43706 of 11 September 2020 – published for comment. Also see Macrotrend Report "South Africa Greenhouse Gas (GHG) Emissions 1970-2021" available at South Africa Greenhouse Gas (GHG) Emissions 1970-2021 | MacroTrends.

¹²⁷⁶ *National Climate Change Green Paper* (2010) 38.

It is evident from the above that some of the critical elements of the international guidelines and standards such as annual reporting, verification also informed the *Green Paper*.

4.2.6 *National Climate Change Response White Paper 2011*

The *White Paper* sets South Africa's vision for an effective climate change response and the long term transition to a climate-resilient and lower-carbon economy and society.¹²⁷⁷ The *White Paper* makes reference to green bonds and also calls for the transition to the use and increase in investment in renewable energy sources without stating how such renewables would specifically be financed.¹²⁷⁸ In transitioning to renewable energy use as a mitigation strategy to effectively manage climate change, the *White Paper* states as its objective that it would build climate resilience, by managing the transition to a climate-resilient, equitable and internationally competitive lower-carbon economy and society.¹²⁷⁹ This would be cogniscent of its key national priorities such as job creation, improved public and environmental health, poverty eradication and social equality.¹²⁸⁰ This would be done through the effective management of climate change impacts and interventions that build as well as sustain the country's economic, social and environmental resilience and emergency response capacity.¹²⁸¹ In maintaining its international obligations South Africa will make a fair contribution to the global effort to stabilise GHG emissions.¹²⁸²

The objectives, whilst acknowledging that the response is both developmental and transformational, do not in the context of a developing country explain how such social aspects of its focus will be financed. Although mitigation and adaptation are central to the holistic approach, the policy reflects "a strategic approach referred to

¹²⁷⁷ *White Paper* 5, 44.

¹²⁷⁸ *White Paper* 26. This is similar to the *National Climate Change Green Paper* (2010) which, whilst acknowledging that successful climate change mitigation must focus on the energy sector in its exposition of South Africa's response to climate change, included in its mitigation strategy, however, is the roll out of renewable energy combined with nuclear energy as having the largest possibility of emission reductions (15). Also see *White Paper* (2011) 42.

¹²⁷⁹ *White Paper* 5.

¹²⁸⁰ *White Paper* 5.

¹²⁸¹ *White Paper* 5.

¹²⁸² *White Paper* 5.

as climate change resilient development".¹²⁸³ The *White Paper* indicates that a fossil fuel dependent economy requiring restructuring could only mean heavy capitalisation of the energy sector towards renewable energy sources that are low carbon and built on the resilience of mitigatory aspects of the fight against climate change.

The *White Paper* provides an extensive range of objectives, principles,¹²⁸⁴ strategies, measures, programmes and developments towards short- and long-term mitigation and adaptation of GHG. These principles are aligned with South Africa's domestic measures to reduce the country's GHG emissions and adapt to the adverse effects of climate change and unique stage of development and capacity to act. The Strategic Priorities are aligned to the National Climate Change Response Objective which is skewed towards emissions reduction and acknowledge the unenviable position of being the largest emitter on the continent. Such emission reductions to reiterate will need to be financed. These strategic priorities are structured around risk reduction and management:¹²⁸⁵

¹²⁸³ *White Paper* s 4. Again, the overall strategic approach of the *White Paper* is that "...South Africa's climate change response is needs driven and customised; developmental; transformational, empowering and participatory; dynamic and evidence-based; balanced and cost effective; and integrated and aligned" without mention of how the cost-effective element is derived (s 4.1).

¹²⁸⁴ The *White Paper* s 3.1 is guided by some of the UNFCCC principles such as common but differentiated responsibilities and respected capabilities; equity; special needs and circumstances; uplifting the poor and vulnerable; intra- and inter-generational sustainability; the precautionary principle; the polluter pays principle; informed participation; and economic, social and ecological pillars of sustainable development. See para 3.6.3.

¹²⁸⁵ "Risk reduction and management-prioritises near-term adaptation interventions that address immediate and observed threats to the economy, ecosystem services and the health and well-being of South Africans while researching and developing short-, medium and longer-term climate resilience, risk and vulnerability management policies and measures". *White Paper* s 4.2.

mitigation actions with significant outcomes;¹²⁸⁶ sectoral responses;¹²⁸⁷ policy and regulatory alignment;¹²⁸⁸ integrated planning;¹²⁸⁹ informed decision-making and planning;¹²⁹⁰ technology research, development and innovation;¹²⁹¹ facilitated behaviour change;¹²⁹² and behaviour change through choice.¹²⁹³

In the case of resource mobilisation, the government should "prioritise the development of comprehensive resource and investment mobilisation strategies, capacities, mechanisms or instruments, or instruments that support and enable implementation of climate change responses at the scale required, including, but not limited, public and private financial resources, incentives, non-market and market-

¹²⁸⁶ "Mitigation actions with significant outcomes" - This relates to "prioritise cost effective and beneficial mitigation policies, measures and interventions that significantly contribute to the country's deviation from the GHG emission 'business as usual trajectory' as measured against a benchmark 'peak, plateau and decline' GHG emission trajectory where GHG emissions peak between 2020 and 2025, plateau for approximately a decade and begin declining in absolute terms thereafter". *White Paper s* 4.2 13.

¹²⁸⁷ "Sectoral response – To prioritise, in accordance with the provisions of this policy, requirement for all key actors, organisations or participations in relevant sectors or sub-sectors to prepare, submit, implement, monitor and report the implementation of detailed climate change response strategies and action plans that clearly articulate their roles, responsibilities, policies, measures, and interventions or actions to contribute to the achievement of the National Climate Change Response Objective in a measurable way." *White Paper s* 4.2 13.

¹²⁸⁸ "Policy and regulatory alignment – Firstly, prioritise interventions already envisaged by national policies, legislation or strategies that have climate change co-benefits, particularly those that also contribute towards the national prioritise of job creation, poverty alleviation or have other positive socio-economic benefits. Secondly, review existing national policies, legislation or strategies, with a view to optimising and maximising the climate change co-benefits of their interventions. Thirdly, integrate into the relevant existing or new policies, legislation or strategies those climate change response interventions that stimulate new economic activities as well as those that improve the efficiency and competitive advantage of existing activities." *White Paper s* 4.2 13.

¹²⁸⁹ "Integrated Planning – Prioritise the mainstreaming of climate change considerations and responses into all relevant sector, national, provincial and local planning regimes such as, but not limited to, the Industrial Policy Action Plan, Integrated Resource Plan for Electricity Generation, Provincial Growth and Development Plans, and Integrated Development Plans." *White Paper s* 4.2 13.

¹²⁹⁰ "Informed decision-making and planning - Prioritise research, systematic observation, knowledge generation, climate change and the implications of its adverse effects on the economy, society and the environment." *White Paper s* 4.2 13.

¹²⁹¹ "Technology research, development and innovation Prioritise cooperation and the promotion of research, investment in and/or acquisition of adaptation, lower-carbon and energy-efficient technologies, practices and processes for employment by existing or new sectors or sub-sectors." *White Paper s* 4.2 13.

¹²⁹² "Facilitated behaviour change Prioritise the use of incentives and disincentives, including regulatory, economic and fiscal measures, to promote behaviour change towards a lower-carbon society and economy." *White Paper s* 4.2 13.

¹²⁹³ "To build the general public's awareness of climate change so as to empower all South Africans to make informed choices that contribute to an economy and society that is resilient to climate change." *White Paper s* 4.2 13.

based instruments, technical cooperation and partnership agreements, and technology transfers at domestic, sub-regional, regional, and international levels".¹²⁹⁴

The listed priorities focus on the overall reduction of GHG emissions. These priorities make some difficult trade-offs in acknowledging that whilst climate change impacts are already being experienced, its mitigation plan will adopt the "peak, plateau and decline" trajectory.¹²⁹⁵ Priority is to be based on cost effective and beneficial policies, and these need to be limited to avoid a proliferation of divisive policies which cause inaction and indecision. Whilst, not concrete in terms of time frames, the "peak, plateau and decline" trajectory adopts a phased over time approach. This benchmark is considered "unfair" and "outside the fair share" of emissions and cuts needed to meet the goals of the *Paris Agreement*.¹²⁹⁶ It can be accurately stated that this is "inconsistent with the cuts needed to meet the goals of the *Paris Agreement*, and not at all consistent with limiting global warming to less than 2° C or 1.5° C".¹²⁹⁷ Without being overly committal, some of the priorities are vague and this allows for a speculative response in that the technology and financing required for mitigation or adaptation strategies are dependent upon the international obligations being realised, such as adequate funding from the multilateral institutions dispersing funding. Some mid-term and long-term priorities are part of the strategic mix providing for some early advantages and near future realisations. Concrete guidance is provided in the alignment of behaviour change and facilitated change resulting in informed choices contributing to an economy and society resilient to climate change. Strategic priorities are about making difficult choices and in a fossil fuel intensive economy such as that

¹²⁹⁴ *White Paper* 14.

¹²⁹⁵ *White Paper* 13.

¹²⁹⁶ Carbon Brief 2018 <https://www.carbonbrief.org/the-carbon-brief-profile-south-africa>. The energy sector is integral to the approach of how some of these strategies will be implemented in meeting the overall reduction of GHG. The *White Paper* recognised that the status quo would have to dramatically change, and this would require strategies more in-tune with the realities of climate change (*White Paper* 9): Even under emission scenarios that are more conservative than current international emissions trends, it has been predicted that by mid-century the South African coast will warm by around 1 to 20C and the interior by around 2 to 30C. By 2100, warming is projected to reach around 3 to 40C along the coast, and 6 to 70C in the interior. With such temperature increases, life as we know it will change completely: parts of the country will be much drier and increased evaporation will ensure an overall decrease in water availability.

¹²⁹⁷ Carbon Brief 2018 <https://www.carbonbrief.org/the-carbon-brief-profile-south-africa>.

of South Africa technology research, development and innovation are critical in transitioning the economy towards a low carbon and climate resilient economy. History has shown that countries that invest in research will succeed in developing diversified and resilient economies. It is to be reiterated that South Africa does need and will need to prioritise the investment into lower-carbon and energy efficient technologies to mitigate against the devastating impacts of climate change.

The *White Paper* is a representation of "the governments vision for an effective climate change response and the long-term, just transition to a climate-resilient and lower-carbon economy and society".¹²⁹⁸ Governments climate change response is objectively seen as "needs driven and customised; developmental in approach; transformational, empowering and participatory; dynamic and evidence-based; balanced and cost effective; and integrated and aligned".¹²⁹⁹ South Africa's approach to mitigation "balances the count's contribution as a responsible global citizen to the international effort to curb global emissions with the economic and social opportunities presented by the transition to a lower-carbon economy as well as with the requirement that the country successfully tackles the development challenges facing it".¹³⁰⁰ Mitigation is to be informed by two contexts, namely:¹³⁰¹

- its contribution as a responsible global citizen to the international effort to curb global emissions; and
- its successful management of the development and poverty eradication challenges it faces.¹³⁰²

South Africa's main opportunities for mitigation of GHG is mainly seen in the *White Paper* as "consisting of energy efficiency, demand side management the movement to less-intensive emissions in the energy mix, with consequent economic benefits of improved efficiency and competitiveness as well as incentivising economic growth in

¹²⁹⁸ *White Paper* 10.

¹²⁹⁹ *White Paper* 12.

¹³⁰⁰ *White Paper* 5.

¹³⁰¹ On 6 December 2009, as similarly stated in the *Green Paper* and in line with Article 4.7 of the UNFCCC, South Africa announced to the global community that it would implement mitigation actions that would result in a "34% and a 42% deviation below it 'Business as Usual' emissions growth trajectory by 2020 and 2025 respectively".

¹³⁰² *White Paper* 24.

sectors with lower energy intensities".¹³⁰³ A different view would be to acknowledge the cost competitiveness of renewables, and to let costs drive the energy sector without political interference. Competitiveness in the energy sector is an option postulated by the *White Paper* which can only suggest that other electricity generators are a possibility to break Eskom's monopoly.¹³⁰⁴ The medium-term options provide more optimistic variables if implemented, these are:

- Shifting to lower-carbon electricity generation options;
- Significant upscaling of energy efficiency applications, especially industrial energy efficiency and energy efficiency in public, commercial and residential buildings and in transport; and
- Promoting transport-related interventions including transport modal shifts (road to rail, private to public transport) and switches to alternative vehicles (e.g., electric and hybrid vehicles) and lower-carbon fuels.¹³⁰⁵

The energy sector is singled out as having the most significant potential for mitigation and this causal connection insinuates a drastic shift to low carbon energy sources such as renewables to mitigate against climate change impacts. This is possible if as the *White Paper* stipulates an "effective national policy that is coordinated, coherent, efficient and effective" is implemented.¹³⁰⁶ Effectiveness may require a balancing act for a country that is energy intensive, South Africa is economically vulnerable to measures taken at the international and national level.¹³⁰⁷ This vulnerability is as a result of exposure to sectors of the economy that are "emissions-intensive, trade-exposed, such as the iron and steel industry, non-ferrous metals, chemicals and petrochemicals (SASOL), mining and quarrying, machinery and manufacturing" as the main affected sectors.¹³⁰⁸ Cross sector collaboration is critical given the

¹³⁰³ *White Paper* 26.

¹³⁰⁴ *White Paper* 27. In addition to these options, biofuels and non-energy mitigation options such as afforestation are seen as short-term solutions.

¹³⁰⁵ *White Paper* 27.

¹³⁰⁶ *White Paper* 10.

¹³⁰⁷ *White Paper* 30.

¹³⁰⁸ *White Paper* 29.

complexity of climate change as espoused in the *White Paper on Energy*,¹³⁰⁹ "the range of players and the complexity of their interrelationships makes energy sector governance difficult to understand, and even harder to manage" but this also is a reflection of the fragmentation of environmental law.¹³¹⁰

In financing the transition to a climate-resilient economy, "stable, well governed institutions" are a critical component to expanding the financial initiatives required by the state.¹³¹¹ The government in the *White Paper* states that it will provide the following actions:

- Promote fair, transparent and timely access to international and domestic resources for both mitigation and adaptation actions by the public and private sector as well as civil society;
- Mainstream climate change response into the fiscal budgetary process and so integrate the climate change response programmes at national, provincial and local government and at development finance institutions and state-owned entities;
- Enable the local development finance institutions to create and implement long-term climate-resilient investment programmes. This includes project development, financial and risk insurance products, technical assistance and capacity-building within their mandates;
- Identify opportunities in the existing financial regulations governing the domestic finance sector to enhance the financial sector's capacity to mainstream climate change risk and investment decisions;
- Establish and/support public platforms to assimilate and disseminate climate science, finance, technology and other related research and information to enable effective decisions about risk and investment;
- Develop a climate finance strategy that contextualises and integrates existing and emerging policy and financing instruments, including addressing the role of market-based measures to achieve the desired economic and social changes.¹³¹²

¹³⁰⁹ *White Paper 44*.

¹³¹⁰ Du Plessis and Murombo "Energy" 889.

¹³¹¹ *White Paper 44*.

¹³¹² *White Paper 44*.

Excitingly the *White Paper* recognises the importance of the mobilisation of climate finance through the use of "specialised environmental funds" and what it terms "new capital market innovations, such as climate or green bonds".¹³¹³ It further states that:

Government recognises the important role for market-based instruments that create fiscal incentives and disincentives to support climate change policy objectives. Thus, South Africa will employ market-based instruments as part of a suite of policy interventions to support the transition to a lower carbon economy. These instruments will be designed to incentivise behaviour change at the individual, institutional and macro-economic levels for a climate-resilient South Africa contributing to a diversification of our energy mix, drive people to implement far-reaching energy efficiency measures, achieve passenger modal shifts, and generate investments in new and cleaner technologies and industries ...¹³¹⁴

This provide opportunities for the implementation of green bonds and that they are to be mainstreamed as financial mechanisms that can be used "on public platforms" such as the JSE.¹³¹⁵ In government's recognition of the magnitude of climate change, and the capital requirements critical for sustainable climate finance architecture required, new market-based instruments will need implementation for climate proofing.¹³¹⁶ In reaching a climate resilient economy, environment-related financial reforms in the private and public sector will be needed to transform investment decision making and create the renewable and sustainable infrastructure needed for climate resilience through the use of new financing instruments.¹³¹⁷ Governments actions in the *White Paper* shift and provide some prudent measures towards understanding that any meaningful action will have to be related to financial mechanisms being critical towards mitigation and adaptation strategies.¹³¹⁸ Some of the actions envisioned are creating a transitional climate finance system that supports mitigation and adaptation actions.¹³¹⁹

¹³¹³ *White Paper* 44.

¹³¹⁴ *White Paper* 41-42; Anon 2019 https://justshare.org.za/wp-content/uploads/2019/04/2019_Pension-fund-legal-opinion-by-Fasken.pdf 28.

¹³¹⁵ See para 4.3.2.

¹³¹⁶ *White Paper* 42.

¹³¹⁷ *White Paper* 42.

¹³¹⁸ *White Paper* 44.

¹³¹⁹ *White Paper* 44.

The green bond market has shown resilience and capacity to fund renewable energy projects mitigating against intensive energy use.¹³²⁰ The contentious issue of tracking climate finance is recognised as being important enough to create a tracking facility for climate finance mechanisms and climate responses that will monitor and coordinate existing climate finance flows.¹³²¹ In recognition of creating a broader approach to providing climate finance the government sets out to partner with domestic financial institutions to fast track and mainstream climate-resilient development (i.e. adaptation and mitigation).¹³²² Broader integration of different types of financial institutions is required in creating a common approach that blends different forms of capital and the introduction of green bonds is a possible mechanism for financing climate resilient infrastructure.¹³²³

Various projects are envisioned in the *White Paper* to create jobs and develop skills.¹³²⁴ Such projects will be showcased to investors with the purpose of implementing mechanisms that reduce risk and provide alternative lower-carbon interventions by building capacity and developing skills.¹³²⁵ The projects which will be initiated as public sector programmes as a response to the vulnerability of people most affected by climate change will serve as a precursor to creating sustainable investment and jobs.¹³²⁶

Near-term Priority Flagship Programmes¹³²⁷ consisting of new initiatives and the scaling up of existing programmes will be implemented informed by the urgency of

¹³²⁰ See paras 2.4 and 3.6.

¹³²¹ *White Paper* 44. See paras 2.5.4. and 3.4.

¹³²² *White Paper* 44.

¹³²³ *White Paper* 42.

¹³²⁴ *White Paper* 33.

¹³²⁵ *White Paper* 33.

¹³²⁶ *White Paper* 33.

¹³²⁷ These Flagship Programmes identified in para 8 of the *White Paper* are (DEA 2016 https://www.environment.gov.za/sites/default/files/docs/introductorysession_flagshipprogrammes.pdf 12):

- The Climate Change Response Public Works Flagship Programme;
- The Water Conservation and Demand Management (WCWDM) Flagship Programme;
- The Renewable Energy (RE) Flagship Programme;
- The Energy Efficiency and Energy Demand Management (EEEDM) Flagship Programme;
- The Transport Flagship Programme;
- The Carbon Capture and Sequestration (CCS0 Flagship Programme;
- The Adaptation Research Flagship Programme.

acting on mitigation and adaptation responses.¹³²⁸ Responses in terms of mitigation or adaptation utilise a suite of policy interventions that use market-based instruments, tax incentives, fiscal subsidies, regulatory measures and information and awareness initiatives.¹³²⁹ As indicated above, the market-based instruments could include green bonds which are best suited for the scale of capital requirements that are used in infrastructure developments. Although it is stated that the Flagship Programmes will be funded by public funds, they do not have their own budgets and their success will be dependent upon effective coordination and management of different finance resources.¹³³⁰ Fiscal allocations in the form of specific conditional grants, integrated grants for municipalities and the Public Transport Infrastructure and Systems Grant will be utilised to finance these Flagship Programmes.¹³³¹ These grants which are in turn dependent on the Ministry of Finance allocating funding within the national budget, in a constrained economy such allocations may not be forthcoming and hence a more reliable funding model is required. The identified Near-term Priority Flagship Programmes are in the major emitting sectors, which have well-known mitigation outcomes and implementation processes, and are either very cost effective (but will still require large capital amounts) and have significant co-benefits or have technology development benefits.¹³³² Bonds are most suitable for large infrastructural builds, they allow for asset-liability matching, this makes them a good fit with institutional investors' long-term liabilities.¹³³³ The *Climate Change Bill* 2018 gives more effect to the goals of the *White Paper*.¹³³⁴

4.2.7 *The Intended Nationally Determined Contribution*

The INDC was made in accordance of decision 1/CP.19 and 1/CP.20 of the Conference of the Parties to the United Nations Framework on Climate Change and South Africa's

¹³²⁸ *White Paper* 31.

¹³²⁹ *White Paper* 31.

¹³³⁰ DEA 2016 https://www.environment.gov.za/sites/default/files/docs/introductorysession_flagship_programmes.pdf 36.

¹³³¹ DEA 2016 https://www.environment.gov.za/sites/default/files/docs/introductorysession_flagship_programmes.pdf 36.

¹³³² *White Paper* 31.

¹³³³ CBI 2015 https://www.climatebonds.net/files/files/GB-Public_Sector_Guide-Final-1A.pdf.

¹³³⁴ See para 4.2.12.

submission was made in terms of its commitments to adaptation, mitigation and finance and investment requirements for both.¹³³⁵ Some acknowledgements are made in the INDC which state that commitments by South Africa are made based on science and equity, and that the adverse impacts of climate change are unavoidable and inevitable.¹³³⁶ South Africa similarly to many other developing countries is vulnerable to the impacts of climate change and this is acute in respect of food security and water scarcity.¹³³⁷ Commitment for South Africa is premised on working on the common goal of ensuring that:

[T]emperature increases are kept well below 2° C above pre-industrial levels, which could include a further revision of the temperature goal to below 1.5° C in light of emerging science noting that global average temperature increase of 2° C translates to up to 4° C for South Africa by the end of the century.¹³³⁸

The temperature goal informs South Africa's starting point in terms of its INDC for both its adaptation and mitigation objectives.¹³³⁹ The INDC in terms of its goals intends to build institutional capacity for climate change response planning and implementation for the period 2020 to 2030.¹³⁴⁰ This will allow for the integration of flexible adaptation and mitigation sector policies and measures into national and sub-national policy frameworks to enable implementation of climate change mitigation and adaptation programmes and projects.¹³⁴¹ These sector plans will be integrated into broader sector plans consistent with relevant sector planning or regulatory legislation.¹³⁴² The INDC is underpinned by core principles such as equity,

¹³³⁵ Anon date unknown <https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/South%20Africa%20First/South%20Africa.pdf> 1.

¹³³⁶ Anon date unknown <https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/South%20Africa%20First/South%20Africa.pdf> 1.

¹³³⁷ Anon date unknown <https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/South%20Africa%20First/South%20Africa.pdf> 1.

¹³³⁸ Anon date unknown <https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/South%20Africa%20First/South%20Africa.pdf> 1.

¹³³⁹ Anon date unknown <https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/South%20Africa%20First/South%20Africa.pdf> 1.

¹³⁴⁰ Anon date unknown <https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/South%20Africa%20First/South%20Africa.pdf> 4.

¹³⁴¹ Anon date unknown <https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/South%20Africa%20First/South%20Africa.pdf> 4.

¹³⁴² Anon date unknown <https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/South%20Africa%20First/South%20Africa.pdf> 4.

responsibility, capability and sustainable development.¹³⁴³ Equity in the context of the INDC relates to adaptation, mitigation and all forms of investment and support.¹³⁴⁴ Research into investments into renewable energy projects have shown positive impacts on the economy.¹³⁴⁵ Further enhanced information through financial analysis and specific investment proposals needs to be researched according to the INDC and such research it is to be argued could provide for the financial gaps that exist to develop the necessary capacity and infrastructure.¹³⁴⁶ South Africa has proposed to the COP that a process of improving information on finance and investments is required, and this information can be integrated into existing reporting by developed and developing countries.¹³⁴⁷ The international frameworks, having made due considerations for developing countries should effectively operationalise support for the enhancement of existing human, intellectual and institutional capacity at the domestic and regional levels to adequately cater for the needs of countries.¹³⁴⁸

The *National Climate Change Bill* 2018 commits South Africa to internationally communicate and implement effective nationally determined climate change responses, including mitigation and adaptation actions, that represent the Republic's fair contribution to the global climate change response.¹³⁴⁹ Appropriate mechanisms are to be implemented and it can be surmised that such mechanisms should include financial instruments that can be used to achieve and give effect to the objectives of the Bill.¹³⁵⁰ Provincial or municipal climate change responses must include measures or programmes relating to both adaptation and mitigation.¹³⁵¹ The response should

¹³⁴³ Anon date unknown <https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/South%20Africa%20First/South%20Africa.pdf> 10.

¹³⁴⁴ Anon date unknown <https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/South%20Africa%20First/South%20Africa.pdf> 10.

¹³⁴⁵ Anon date unknown <https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/South%20Africa%20First/South%20Africa.pdf> 10.

¹³⁴⁶ Anon date unknown <https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/South%20Africa%20First/South%20Africa.pdf> 10.

¹³⁴⁷ Anon date unknown <https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/South%20Africa%20First/South%20Africa.pdf> 10.

¹³⁴⁸ Anon date unknown <https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/South%20Africa%20First/South%20Africa.pdf> 10.

¹³⁴⁹ *Climate Change Bill*, 2018 Preamble (c).

¹³⁵⁰ *Climate Change Bill*, 2018 6(1)(a)-(b).

¹³⁵¹ *Climate Change Bill*, 2018 9(2)(b).

identify and include mechanisms for their effective implementation aligned with national sector plans.¹³⁵²

The INDC as a national report (which can be said to be aligned with the guidelines and international standards on green bonds) which publicly states its contribution in the context of national priorities, circumstances and capabilities towards actions intended to meet the international long-term goal of the *Paris Agreement* of holding the increase in global average temperatures to well below 20° C above preindustrial levels and pursuing efforts to limit the temperature increase to 1.50° C above pre-industrial levels. The MRV system makes a contribution towards the legitimacy and trust required in the global collaborative effort of producing reliable data. This is aligned to the green bond guidelines and standards.

4.2.8 National Development Plan

The National Development Plan (NDP) was drafted in May 2010 recognising the centrality of energy as critical to economic development and climate change as a potential driver of innovative change in the energy sector.¹³⁵³ It serves as the overall strategic policy of the country with the aim of eliminating poverty and reducing inequality by 2030.¹³⁵⁴ It provides a long-term perspective on different sectors and defines a desired destination by identifying the role different sectors of society need to play in reaching that outcome.¹³⁵⁵ Green bonds are not identified as a financial instrument that can be used to finance climate resilient infrastructure, but debt finance in its more traditional form is, however, recognised as integral for start-ups as a finance mechanism for these emerging businesses.¹³⁵⁶

The NDP recognises that electricity generation is a significant contributor to GHG emissions and the use of clean technologies like renewable energy can have a

¹³⁵² *Climate Change Bill*, 2018 9(2)(c).

¹³⁵³ Du Plessis and Murombo "Energy" 903.

¹³⁵⁴ NPC 2014 https://www.gov.za/sites/default/files/gcis_document/201409/ndp-2030-our-future-make-it-workr.pdf 1.

¹³⁵⁵ NPC 2014 https://www.gov.za/sites/default/files/gcis_document/201409/ndp-2030-our-future-make-it-workr.pdf 1.

¹³⁵⁶ NPC 2014 https://www.gov.za/sites/default/files/gcis_document/201409/ndp-2030-our-future-make-it-workr.pdf 143.

profound effect on GHG emission reduction. The NDP recognises that an energy mix is required with the intention of enhancing energy supply security and innovation may be required to transform the energy sector.¹³⁵⁷ The principle of sustainability as a policy initiative cuts across the NDP as central to development as espoused through the critical actions of "building environmental sustainability and resilience".¹³⁵⁸

The vision set out by the NDP is that by 2030 South Africa will have an energy sector that promotes:

- Economic growth and development through adequate investment in energy infrastructure and the provision of quality services that are competitively priced, reliable and efficient. Local production of energy technology will support job creation;
- Social equity through expanded access to energy services, with affordable tariffs and well-targeted and sustainable subsidies for needy households; and
- Environmental sustainability through efforts to reduce pollution and mitigate effects of climate change.¹³⁵⁹

In as much as the grid has expanded and provided many more people with electricity, coal has stubbornly remained the significant and primary source of the growth of electrification in South Africa.¹³⁶⁰ Historically, the under-pricing of electricity encouraged the establishment of large-scale beneficiation plants which utilised the

¹³⁵⁷ NPC 2014 https://www.gov.za/sites/default/files/gcis_document/201409/ndp-2030-our-future-make-it-workr.pdf 163. Also see the discussion on the Integrated Resource Plan 2010-2013 – 4.2.3.

¹³⁵⁸ NPC 2014 https://www.gov.za/sites/default/files/gcis_document/201409/ndp-2030-our-future-make-it-workr.pdf 48.

¹³⁵⁹ Polity 2012 <https://www.polity.org.za/article/national-energy-act-2012-integrated-energy-plan-ning-report-executive-summary-draft-gazette-36690-regulation-512-2013-07-24> 48.

¹³⁶⁰ Also see GNESD 2019 <https://energy-access.gnesd.org/cases/22-south-african-electrification-programme.html>. It has also been the most politically contested energy source and the cause of the highest emissions which causes climate change. Also see Burton, Caetano and McCall Coal transition in South Africa. Coal provides over 70 per cent of all primary energy in South Africa, more than 90 per cent for electricity generation and a third of all liquid fuels - NPC 2014 https://www.gov.za/sites/default/files/gcis_document/201409/ndp-2030-our-future-make-it-workr.pdf 164.

cheap electricity.¹³⁶¹ This was seen in the large aluminium smelter plants and other mining operations which ordinarily would not have been set up had the electricity price been not as cheap as it was. The procurement of 20 000MW of renewable energy by 2030 as mandated by the Integrated Resource Plan must take place with energy efficiency in the mining sector required to improve its mineral processing by 15 per cent, if GHG mitigation is indeed to be reduced.¹³⁶² This is in sync with the NDPs "expanded renewable energy" plan and the running of a low carbon economy.¹³⁶³

Mitigation actions in the NDP revolve around the transition to a low carbon economy that ensures that emissions peak in 2025, remain stagnant up to 2035 and then start declining.¹³⁶⁴ The carbon footprint is to be gradually reduced by key measures such as retrofitting, arguably the use of clean coal technologies and the use of carbon capture technologies which are developed by research and development.¹³⁶⁵ Partnerships with countries such as Angola and Nigeria in financing their already developed petroleum industries could be advantageous to South Africa in mitigating the import costs of liquid fuels and further development of hydro projects in neighbouring countries such as Mozambique and Zimbabwe could also provide some additional sources of clean energy.¹³⁶⁶ However, long term droughts have indicated

¹³⁶¹ NPC 2014 https://www.gov.za/sites/default/files/gcis_document/201409/ndp-2030-our-future-make-it-workr.pdf 164.

¹³⁶² NPC 2014 https://www.gov.za/sites/default/files/gcis_document/201409/ndp-2030-our-future-make-it-workr.pdf 48. The mining sector was identified as becoming a less-intensive energy.

¹³⁶³ Du Plessis and Murombo "Energy" 877 states that "South Africa has reduced its dependence on carbon, natural resources and energy, while balancing this transition with its objectives of increasing employment and reducing inequality. Development initiatives, especially in rural communities, are increasingly resilient to the impact of climate change, with mutual benefits between sustainable development and low carbon growth quickly identified and exploited. The state has significantly strengthened its capacity to manage ongoing internalisation of environmental costs, and to respond to the increasingly severe impacts of climate change." This objective echoes the sentiments of the Integrated Resource Plan 2010 (IRP 15), in which renewable energy supposedly makes a 42 per cent contribution towards the energy mix dependent upon cost reductions and learning rates of renewables.

¹³⁶⁴ NPC 2014 https://www.gov.za/sites/default/files/gcis_document/201409/ndp-2030-our-future-make-it-workr.pdf 67.

¹³⁶⁵ NPC 2014 https://www.gov.za/sites/default/files/gcis_document/201409/ndp-2030-our-future-make-it-workr.pdf 177.

¹³⁶⁶ NPC 2014 https://www.gov.za/sites/default/files/gcis_document/201409/ndp-2030-our-future-make-it-workr.pdf 177.

Zimbabwe's vulnerability in this regard.¹³⁶⁷ The phasing in of renewable energy activities, provides for short, medium and long term priorities. The short-term provides for 3725MW of renewable energy, the medium-term provides for 7000MW of renewable energy and finally the long-term projection is 20 000MW of renewable energy that will be contracted.¹³⁶⁸ The Peak-Plateau-Dcline trajectory is in line with the submissions made to the UNFCCC at the 2015 Paris COP in which renewable energy and energy efficiency become integral to the electricity grid.¹³⁶⁹

The NDP envisions an energy sector in which by 2030 it would provide "a reliable and efficient energy service at a competitive rate, that is socially equitable through expanded access to energy at affordable tariffs and was environmentally sustainable through reduced pollution".¹³⁷⁰ Law has proven to be a catalyst for renewable energy and also crucial to facilitating sustainable use of energy.¹³⁷¹ Therefore law should at every opportunity be used to curtail the growth of carbon-based sources of energy and renewables be promoted, supported by financial mechanisms that inculcate sustainable development.

In financing many of the NDP objectives, developmental finance, project finance, equity finance, and debt finance are seen as providing a crucial role in promoting industrial policy.¹³⁷² However, it is imperative that government with the assistance of the private sector must identify areas to nurture and support other (financial) instruments to meet these demands for climate resilient infrastructural

¹³⁶⁷ Thompson *TimesLive*.

¹³⁶⁸ NPC 2014 https://www.gov.za/sites/default/files/gcis_document/201409/ndp-2030-our-future-make-it-workr.pdf 177. The Cookhouse Windfarm already contributes more than this to the electricity grid namely on date of access 340 000 MWh. This is excluding the contribution of all the other wind farms that are already in operation all over South Africa. See in this regard the website of Cookhouse Windfarm 2014 <https://cookhousewind.co.za/>.

¹³⁶⁹ See para 3.2.2.

¹³⁷⁰ IRP 2019 8.

¹³⁷¹ Du Plessis and Murombo "Energy" 886.

¹³⁷² NPC 2014 https://www.gov.za/sites/default/files/gcis_document/201409/ndp-2030-our-future-make-it-workr.pdf 143.

development.¹³⁷³ Green bonds as a form of debt finance are capable of leveraging the capital markets for such infrastructural development.¹³⁷⁴

The NDP had the foresight to recognise the importance of regular reporting on climate change mitigation strategies and the early adoption of mitigation technologies and mitigation finance mechanisms appropriate to South Africa.¹³⁷⁵ Aligning South Africa's response to carbon pricing with international standards for the monitoring, verification was identified as critical to meeting its international commitments.¹³⁷⁶ Government capacity was to be built to effectively administer the monitoring, reporting and verification systems, supported by the participation industries and other sectors.¹³⁷⁷ In enhancing the government systems and capacity and managing the transitioning to a low-carbon economy, a need was identified to strengthen the then Department of Environmental Affairs to have the necessary capacity to provide mechanisms and oversight for the monitoring, reporting and verification of sectoral carbon emissions. Reporting was to be comprehensive and data was to be provided on annual basis. Some of the critical elements such as reporting, verification and review in the international guidelines and standards informed the NDP.

4.2.9 Integrated Resource Plan 2010-2030

The Integrated Resource Plan for South Africa 2010-2030 (IRP 2010-2013)¹³⁷⁸ is an embodiment of a twenty-year electricity plan that informs the electricity sector and

¹³⁷³ NPC 2014 https://www.gov.za/sites/default/files/gcis_document/201409/ndp-2030-our-future-make-it-workr.pdf 115.

¹³⁷⁴ See paras 2.3, 3.6 and 4.3.4.5.

¹³⁷⁵ NPC 2014 https://www.gov.za/sites/default/files/gcis_document/201409/ndp-2030-our-future-make-it-workr.pdf 205.

¹³⁷⁶ NPC 2014 https://www.gov.za/sites/default/files/gcis_document/201409/ndp-2030-our-future-make-it-workr.pdf 208.

¹³⁷⁷ NPC 2014 https://www.gov.za/sites/default/files/gcis_document/201409/ndp-2030-our-future-make-it-workr.pdf 208.

¹³⁷⁸ GN R400 in GG 34263 of 6 May 2011, as updated by the Integrated Resource Plan Update: Assumptions, Base Case Results and Observations – GN 1431 in GG 40445 of 25 November 2016; Integrated Resource Plan (IRP2019) October 2019 – GN 1360 in GG 42784 of 18 October 2019; The IRP is specifically developed by the Department of Energy, the system operator and National Electricity Regulator of South Africa (NERSA) as the requirements of the *Electricity Regulation Act* 4 of 2006 and regulations within the Electricity Regulations for New Generation Capacity published in 2009. See in this regard Wright *et al* 2016 https://www.csir.co.za/sites/default/files/Documents/IRP_Update_Assumptions_1904.pdf.

is considered a living plan that can be periodically updated "based on an informed basis considering the latest trends and developments both locally and internationally in supply technology costs, demand forecasts for electricity and existing generation fleet performance".¹³⁷⁹ The IRP 2010-2030 defines the plan as "the co-ordinated schedule for generation expansion and demand-side intervention programmes, taking into consideration multiple criteria to meet electricity demand".¹³⁸⁰ The plan in part provides for the expansion of fossil fuels in the energy grid through the construction of coal fired power plants, contrary to the NDP.¹³⁸¹ The focus on fossil fuels and "multiple criteria" includes the expansion of fossil fuel plants that risk being financially stranded and increasing GHG emissions.¹³⁸²

The IRP acknowledges that an increase in electricity generation is required through (170% increase to 454TW) an apportionment of generational capacity increases through the various energy sources.¹³⁸³ Certain key constraints are recognised by the plan such as "reducing carbon emissions" and the "security of supply of electricity".¹³⁸⁴ Coal will be reduced from 80 per cent to 46 per cent of electricity supply by 2030 with renewables supposedly accounting for 21 per cent of electricity supply.¹³⁸⁵ Renewables as exponential technologies is seen to continue to decline in price and as such they should be encouraged.¹³⁸⁶ There should not be any limitation

¹³⁷⁹ Wright *et al* 2016 https://www.csir.co.za/sites/default/files/Documents/IRP_Update_Assumptions_1904.pdf.

¹³⁸⁰ Du Plessis and Murombo "Energy" 877.

¹³⁸¹ See para 4.2.2.

¹³⁸² This inclusion of fossil fuels contradicts the *National Energy Act* in its preamble, which provides for the increasing of renewables as a mitigation strategy against climate change. The *National Energy Act* assumes that renewables would be able to compete on an equal footing with fossil-based energy sources, a misplaced notion. This has hampered the growth of renewables as when one considers the historical facts fossil fuels were subsidised in their growth and further to this there is a lack of clarity within the Act on how renewables should be increased. See in this regard Du Plessis and Murombo "Energy" 887. Also see para 4.3.4.5.

¹³⁸³ Bowman and Gilfillan 2015 <http://www.bowman.co.za/News-Blog/Blog/History-of-Renewable-Energy-in-South-Africa>.

¹³⁸⁴ Bowman and Gilfillan 2015 <http://www.bowman.co.za/News-Blog/Blog/History-of-Renewable-Energy-in-South-Africa>.

¹³⁸⁵ Du Toit *Promoting renewable energy* 283. Coal it is to be noted accounts for far too much of the supply with a limitation set on renewables, unnecessarily so in the view of the author.

¹³⁸⁶ Similar technologies such as in the telecommunications industry for example reduced in price over time. See in this regard Diamandis 2019 <https://singularityhub.com/2019/05/17/5-coming-breakthroughs-in-energy-and-transportation/>.

on renewables as not only do they provide for reduced emissions but also provide for off-grid solutions. The goal of the country is to make the transition to a low-carbon economy, this goal provides for the just transition cognisant of job creation and development in a carbon constrained future.¹³⁸⁷

The IRP 2010-2030 sets a broad plan for the long-term incremental, but slow use of renewable energy as envisaged by the government. The most notable consequence of the IRP 2010-2030 is the recognition of the generation capacity required (per technology) and the requisite timing in the long-term based on a set of assumptions and predefined constraints.¹³⁸⁸ The IRP 2010-2030 acknowledges the direct link between energy use in South Africa and the rising GHG levels and the necessity for energy sector reform and the role of mitigation strategies.¹³⁸⁹ This energy sector reform should lead to an increase in renewable energy forming a significant portion of energy supply. Two revisions have been made since the original document with the latest being drafted in 2016 which includes "Updated input assumptions including demand forecasts, existing plant performance, supply technology, decommissioning schedules and newly commissioned/under construction as well as preferred bidder power generators (as part of the Renewable Energy Independent Power Producer Programme (REIPPPP) and base-load coal Independent Power Producer (IPP) program)".¹³⁹⁰ The IRP does seem contradictory if indeed it is to meet the climate change challenge, more coal Independent Power Producers (IPPs) are envisioned as being part of the additional power supply.¹³⁹¹ This is within the context of wherein electricity generation alone contributes over 40 per cent of the GHG emissions. A further 1000MW of coal IPPs will be added between 2023-24 which will certainly

¹³⁸⁷ Winkler and Marquand 2009 *Climate and Development* 54.

¹³⁸⁸ Wright *et al* 2016 https://www.csir.co.za/sites/default/files/Documents/IRP_Update_Assumptions_1904.pdf.

¹³⁸⁹ Paragraph 2 at 2 of the IRP Executive Summary.

¹³⁹⁰ Wright *et al* 2016 https://www.csir.co.za/sites/default/files/Documents/IRP_Update_Assumptions_1904.pdf.

¹³⁹¹ Wright *et al* 2016 https://www.csir.co.za/sites/default/files/Documents/IRP_Update_Assumptions_1904.pdf.

increase energy costs as well as increasing GHG emissions.¹³⁹² Some coal plants will be extended, with the effect that government will in actual fact arbitrarily decommission coal plants over a 32 to 50 year life-span, that is too long a time period for an urgent matter that needs decisive action.¹³⁹³ Recommendations have been made that decommissioning should be based on endogenous factors with due consideration for associated risks that coal imposes.¹³⁹⁴ The IRP2019 envisages still the use of coal as part of South Africa's energy mix but indicates a higher contribution for renewable energy.¹³⁹⁵

Renewables are undoubtedly the technology that is required to alleviate GHG emissions.¹³⁹⁶ There is no justification for renewable energy limitations on annual investment in renewable energy technologies.¹³⁹⁷ Renewable energy is already the least-cost technology of any source of energy for electricity generation as acknowledged in two statements by the IRP:

- The scenario without renewable energy annual build limits provides the least-cost option by 2030.

¹³⁹² ERC UCT http://www.erc.uct.ac.za/sites/default/files/image_tool/images/119/Papers-2018/General%20ERC%20comments%20on%20CC%20Bill%20Aug%202018.pdf 3. The harmonious working of legislation meant to reduce GHG emissions such as the Carbon Tax are unceremoniously undone with the introduction of more coal plants.

¹³⁹³ ERC UCT http://www.erc.uct.ac.za/sites/default/files/image_tool/images/119/Papers-2018/General%20ERC%20comments%20on%20CC%20Bill%20Aug%202018.pdf 3. Cost analysis of alternative renewable energy technologies that could have been built instead of Medupi and Kusile revealed that "It was estimated that, for the most part, it would be possible to develop the same amount of installed capacity as the two power plants utilising the damage cost only in 20 years. That implies that over the 50-year lifespan of Medupi and Kusile, their installed capacity could have been more than doubled. From the above it is self-evident that the climate change-related opportunity cost is equal to 21 700MW of renewable electricity alternatives (86777 MW50 years/20 years)" - Blignaut 2012 *JESA* 72.

¹³⁹⁴ ERC UCT http://www.erc.uct.ac.za/sites/default/files/image_tool/images/119/Papers-2018/General%20ERC%20comments%20on%20CC%20Bill%20Aug%202018.pdf 3.

¹³⁹⁵ The IRP 2010-2030 stated that the energy mix by 2030 will consist of 34,000MW of coal (46%); 1,860MW of nuclear (2.5%); 4,696MW of hydro (6%); 2,912MW of pumped storage (4%); 7,958MW of solar PV (10%); 11,442MW of wind (15%); 11,930 of gas (16%) and 600MW of concentrated solar power (1%) (a figure that most certainly have already been increased). See in this regard also Kapdi 2018 <https://www.mondaq.com/southafrica/Government-Public-Sector/760212/Updates-To-The-Integrated-Resource-Plan-2010-2030>.

¹³⁹⁶ ERC UCT http://www.erc.uct.ac.za/sites/default/files/image_tool/images/119/Papers-2018/General%20ERC%20comments%20on%20CC%20Bill%20Aug%202018.pdf 4.

¹³⁹⁷ ERC UCT http://www.erc.uct.ac.za/sites/default/files/image_tool/images/119/Papers-2018/General%20ERC%20comments%20on%20CC%20Bill%20Aug%202018.pdf 4.

- The scenario without renewable energy annual build limits provides the least-cost option by 2050.¹³⁹⁸

The above commitment to reduce CO₂ emissions as well as the policy framework makes provision for financial instruments. In the following paragraphs it will be determined whether the legislation provides an enabling framework for the introduction of financial instrument.

4.2.10 National Energy Act

The *National Energy Act* 34 of 2008 does not make any mention of green bonds or financing but incorporates the broad themes of mitigation and sustainable development. The Act in its preamble makes reference of "...sustainable quantities and affordable prices ... adequate investment in, appropriate upkeep and access to energy infrastructure" but does not make reference of how such investments will be made and where such financing of the large-scale capital project will be done.¹³⁹⁹ As part of its objective the Act provides for sustainable development as contributing towards South Africa's economy. The Minister may make regulations on the use of sustainable energy.¹⁴⁰⁰ The South African National Energy Development Institute (SANEDI)¹⁴⁰¹ may commercialise energy technologies or provide grants for the development thereof, amongst others.¹⁴⁰² SANEDI is funded by funds allocated by Parliament, donations, contributions and any other money they may receive.¹⁴⁰³ It is not unlikely that SANEDI could use green bonds as a manner to raise funding for new energy technology development.

Section 6(3)(a) of the Act states that the Integrated Energy Plan must take into account "greenhouse gas mitigation within the energy sector and integrated development plans of local and provincial authorities".¹⁴⁰⁴ The Integrated Energy Plan

¹³⁹⁸ ERC UCT http://www.erc.uct.ac.za/sites/default/files/image_tool/images/119/Papers-2018/General%20ERC%20comments%20on%20CC%20Bill%20Aug%202018.pdf 4.

¹³⁹⁹ *National Energy Act* 34 2008.

¹⁴⁰⁰ *National Energy Act* 34 2008, s 6(4)(a).

¹⁴⁰¹ Established in terms of s 7 of the *National Energy Act*.

¹⁴⁰² Section 7(2)(iii) and (x).

¹⁴⁰³ Section 14.

¹⁴⁰⁴ *National Energy Act* 34 2008, s 6(3)(a).

was published in 2016¹⁴⁰⁵ and serves, amongst others, to guide the selection of appropriate technologies as well as to guide investment in and the development of energy infrastructure in South Africa.¹⁴⁰⁶ The Integrated Energy Plan further emphasises continuously that the cost of energy should be minimised and that access to energy should be broadened. Although the plan provides an analysis of the possible costs associated with the different energy scenarios, it does not state how or where the funding should come from.

4.2.11 National Environmental Management: Air Quality Act (NEM:AQA)

NEM:AQA's main aim is to address air quality but also recognises that substances such as greenhouse gases have an adverse effect on the environment, amongst others.¹⁴⁰⁷ The Act also has to give effect to South Africa's international obligations (which by lack of any other legislation on climate change) includes its commitment to address climate change as set out above.¹⁴⁰⁸ The 2017 National Framework for Air Quality Management in the Republic of South Africa¹⁴⁰⁹ (2017 National Framework) reiterates this commitment.¹⁴¹⁰ GHG have been declared a priority pollutant, for which pollution prevention plans have to be prepared.¹⁴¹¹ There is also an obligation to report on GHG emissions.¹⁴¹² The NEM:AQA does not provide for financial instruments or incentives to address climate change mitigation. This is dealt with in the *Climate Change Bill* that was published in 2018. By the writing of this thesis, the Bill has not been approved yet. A report of Climate Action Tracker indicated in

¹⁴⁰⁵ GN 1430 in GG 40445 of 25 November 2016.

¹⁴⁰⁶ Section 1.

¹⁴⁰⁷ Long title and Preamble read with s 2 of the NEM:AQA.

¹⁴⁰⁸ Section 7(1)(b).

¹⁴⁰⁹ GN 1144 in GG 41996 of 26 October 2018.

¹⁴¹⁰ Paragraph 2.4.1 of 2017 National Framework.

¹⁴¹¹ Section 29.

¹⁴¹² GN 71 in GG 42203 of 1 February 2019, amended by GN R994 in GG 43712 of 11 September 2020. Also see Methodological Guidelines for Quantification of Greenhouse Gas Emissions – Carbon Sequestration in the Forestry Industry that were published for comment – GN 1283 in GG 43962 of 4 December 2020.

December 2020 that South Africa needs to expedite the promulgation of the Bill in order to give effect to its international commitments.¹⁴¹³

4.2.12 National Climate Change Bill 2018

The *National Climate Change Bill* 2018 commits South Africa to internationally communicate and implement effective nationally determined climate change responses, including mitigation and adaptation actions, that represent the Republic's fair contribution to the global climate change response.¹⁴¹⁴ Appropriate mechanisms are to be implemented and it can be surmised that such mechanisms could include financial instruments that may be used to achieve and give effect to the objectives of the Bill.¹⁴¹⁵ Provincial or municipal climate change responses must include measures or programmes relating to both adaptation and mitigation.¹⁴¹⁶ The response should identify and include mechanisms for their effective implementation aligned with national sector plans.¹⁴¹⁷

The *Climate Change Bill* provides for "appropriate mechanisms, systems and procedures to give effect to the Republic's obligations in terms of international climate change related agreements" suggesting that these mechanisms can be developed and aligned with international best practice in terms of guidelines and standards.¹⁴¹⁸ Mechanisms such as green bonds will have to be coordinated as a response action in transitioning towards a climate change resilient and lower carbon economy as stated in the Bill.¹⁴¹⁹ The *Climate Change Bill* encourages the review of climate change assessments and responses at least once every five years, as well as the publication of provincial and municipal climate change response implementation plans every five years. This should rather be on annual basis because of the rapid changes taking place from an environmental perspective as well as a technological perspective where

¹⁴¹³ CAT 2020 https://climateactiontracker.org/documents/837/2020_12_CAT_Governance_Report_South_Africa.pdf.

¹⁴¹⁴ *Climate Change Bill*, 2018 Preamble (c).

¹⁴¹⁵ *Climate Change Bill*, 2018 6(1)(a)(b).

¹⁴¹⁶ *Climate Change Bill*, 2018 9(2)(b).

¹⁴¹⁷ *Climate Change Bill*, 2018 9(2)(c).

¹⁴¹⁸ *Climate Change Bill*, 2018 6(b).

¹⁴¹⁹ *Climate Change Bill*, 2018 13(a).

more accurate and faster data is required that can be measured.¹⁴²⁰ Having made international commitments in the preamble of the Bill to communicate and effectively implement its response, South Africa can therefore be said to meet some of the international guidelines and standards such as transparency.¹⁴²¹ The *Government Gazette* as well as departmental websites are mechanisms in which the Minister may frequently disseminate information to the public thus making information publicly available.

As such the *Climate Change Bill* does not provide directly for financial mechanisms or green bonds. As the Bill is dealing specifically with climate change, it may the place to deal with financial measures that could address mitigation and adaptation in the long term and to allow for and regulate green bonds.

4.2.13 Carbon Tax Act 15 of 2019

The *Carbon Tax Act* 15 of 2019 aims to provide for the imposition of a tax on the carbon dioxide (CO₂) equivalent of greenhouse gas emissions; and to provide for matters connected therewith.¹⁴²² The causality of the increase in anthropogenic gas emissions is confirmed in the text as being the cause of climate change and interventions that build on environmental resilience, sustainability as well as responses that protect the economic, social, environmental development need to proceed in a sustainable manner.¹⁴²³ This Act is a response to the growing impacts of GHG emissions and seeks to provide for a low carbon economy by taxing carbon emissions. Carbon tax will be imposed at a rate of R120 per tonne and this is subject to increase by the amount of consumer inflation plus two percent for the preceding year as determined by Statistics South Africa per year until 2022.¹⁴²⁴ The calculation of the amount of tax payable in the different emitting activities is provided for in the context of incentivising the efficient use of energy and nudging the economy towards

¹⁴²⁰ *Climate Change Bill*, 2018 9(b).

¹⁴²¹ *Climate Change Bill*, 2018 Preamble (c).

¹⁴²² *Carbon Tax Act* 15 of 2019.

¹⁴²³ Preamble *Carbon Tax Act* 15 of 2019.

¹⁴²⁴ *Carbon Tax Act* 15 of 2019, s 5(2).

a more sustainable growth path.¹⁴²⁵ Green bonds do not form part of the mitigation strategy nor is there mention of alternative financial mechanisms that can be used. The *Carbon Tax Act* similar to international guidelines and standards makes for reporting requirements to be made in respect of that tax period on annual basis by the Commissioner to the Minister in terms of (a) the total amount of GHG emissions reported in respect of which tax payers are liable or the carbon tax and (b) the amount of carbon tax collected.¹⁴²⁶

4.2.14 Preliminary observations

The South African policy and climate change legal framework does not provide for green bonds. The *National Climate Change Response White Paper* is the only policy document that makes mention of green bonds as a "new capital market innovation".¹⁴²⁷ However, subsequent legislation has not taken this any further.

4.3 Existing Green Bond Framework

Legislation will be discussed to determine if it provides for green bonds. The JSE requirements will be discussed to determine whether it is in line with the international framework as set out in chapter 3. In this part the FMA, *Pension Funds Act* 24 of 1956, *Taxation Laws Amendment Act* 17 of 2009 and local government legislation will be discussed, followed by the *Financial Markets Act* 19 of 2012 under the JSE Green Bond Segment Debt Listing Requirements section 6.10.

4.3.1 Financial Markets Act 19 of 2012 (FMA)

In general, bonds are regulated by the FMA which repealed the *Securities Services Act* 36 of 2004. Bonds are defined under "securities" as listed or unlisted and are issued by public companies, public state-owned enterprises, the South African

¹⁴²⁵ Preamble *Carbon Tax Act* 15 of 2019.

¹⁴²⁶ *Carbon Tax Act* 15 of 2019, Part V s 18.

¹⁴²⁷ *White Paper* 42.

Reserve Bank and the Government of the Republic of South Africa.¹⁴²⁸ Bonds are therefore defined in terms of their issuance and not substantively as to what they are. The *Banks Act* 94 of 1990 refers to bonds as debt instruments in terms of their function as having value and being assets.¹⁴²⁹ The *Banks Act* 94 of 1990 does not define a bond nor does it refer to a green bond. A generic reference to debt instruments is made throughout the Act for instance as "secondary capital", "secondary unimpaired reserve funds", and "hybrid debt instruments".¹⁴³⁰ Securities are also liquid assets in terms of the *Banks Act*, as issued by the FMA.¹⁴³¹

The FMA amongst its aims provides for the regulation of financial markets and regulates and controls securities trading.¹⁴³² The Act further regulates the licensing and regulation of exchanges, and control of securities trading.¹⁴³³ The Act regulates the custody and administration of securities and aligns the Act with international standards.¹⁴³⁴ The Act intends to promote the international and domestic competitiveness of the South African financial markets and of securities in the Republic.¹⁴³⁵ The registrar in terms of section 6(2) of the Act must perform his or her functions by supervising and enforcing compliance having regard to international supervisory standards.¹⁴³⁶ Amongst the various powers of the registrar, is the power to prescribe standards in accordance with a code of conduct and impose reporting requirements which may very well be, those of the international guidelines and standards of green bonds.¹⁴³⁷ According to the FMA an exchange must issue listing requirements which prescribe standards of disclosure and corporate governance that

¹⁴²⁸ FMA 2012, s 22. The *Financial Sector Regulation Act* 9 of 2017 now defines "securities" under "financial instrument" to still include a bond as a debt instrument. "Financial instrument means (c) a debt instrument such as a debenture or a bond, but not a credit agreement" whereas in the FMA 2012 "securities" means "debentures, and bonds issued by public companies, public state-owned enterprises, the South African Reserve Bank and the Government of the Republic of South Africa".

¹⁴²⁹ *Banks Act* 94 of 1990, s 13.

¹⁴³⁰ *Banks Act* 94 of 1990, s 13.

¹⁴³¹ *Banks Act* 94 of 1990, s 10.

¹⁴³² FMA 2012, s 3.

¹⁴³³ FMA 2012, s 2.

¹⁴³⁴ FMA 2012, s 2.

¹⁴³⁵ FMA 2012, s 2(e).

¹⁴³⁶ FMA 2012, s 6(b)(i).

¹⁴³⁷ FMA 2012, s (6)(7)(b).

issuers of listed securities must meet.¹⁴³⁸ In terms of the Climate Bonds Standard v3.0 this will include annual reporting and public disclosure, documentation disclosure associated with the green bond, the type of metrics or indicators used for the bond, general transparency with the issuance process of a bond, the regular publication of updates to the public and invested parties, and the mandatory disclosure and verification of the green bond.¹⁴³⁹

In terms of the international guidelines and standards reporting forms a critical element. Reporting as a mechanism is seen in the reporting of transactions in listed securities,¹⁴⁴⁰ the reporting obligations of the unlisted and listed companies,¹⁴⁴¹ reporting to the Registrar and in accordance with the International Financial Reporting Standards and the requirements of the *Companies Act*.¹⁴⁴² In terms of reporting obligations it can be seen that frequency of reporting and ensuring adequate reporting are necessary in maintaining the integrity of the security.¹⁴⁴³ In terms of verification the registrar may require verification of information supplied by an applicant for a license.¹⁴⁴⁴

The banking sector in pursuance of sustainability initiatives is self-driven and motivated by the use of voluntary initiatives which are a combination of internationally developed standards and local strategies.¹⁴⁴⁵ Banks have generally applied sustainable development principles in their decision-making on large deals or projects through the Equator Principles¹⁴⁴⁶ and the International Finance Corporation

¹⁴³⁸ FMA 2012, s 11(d).

¹⁴³⁹ See para 3.6.3.

¹⁴⁴⁰ FMA 2012, s 25.

¹⁴⁴¹ FMA 2012, s 58.

¹⁴⁴² FMA 2012, s 91.

¹⁴⁴³ FMA 2012, s 58(d).

¹⁴⁴⁴ FMA 2012, ss 8(2)(a), 28(2)(a), 48(2)(a) and 55(2)(a).

¹⁴⁴⁵ DNT 2020 <http://www.treasury.gov.za/publications/other/Sustainability%20technical%20paper%202020.pdf> 26.

¹⁴⁴⁶ See in this regard Equator Principles 2020 <https://equator-principles.com/about/>. Also see Contreras, Bos and Kleimeier 2019 *World Development* 306-324; Caldas and Martins 2016 *Revista Brasileira de Estudos Políticos* 183-230.

(IFC) Performance Standards.¹⁴⁴⁷ Some other standards adopted by the banks in South Africa are the UN Global Compact, Dow Jones Sustainability Index, United Nations Environment Programme Finance Initiative (UNEP FI), UNEP Positive Impact Manifesto, and the Principles for Responsible Banking.¹⁴⁴⁸ The Banking Association of South Africa (BASA) has formally endorsed the UN Principles for Responsible Banking but these are not yet formal conditions of membership to BASA.¹⁴⁴⁹

The banking sector in addressing sustainability issues has largely been driven by risk management.¹⁴⁵⁰ Each bank has approached sustainability from their own perspectives and there has not been a coordinated effort as a sector to align approaches.¹⁴⁵¹ The risk focus is at the transactional level where risks are a potential source of credit or reputational risk.¹⁴⁵² The international response by banks has been in trying to better understand their exposure to specific environmental risks and the social impacts that those provoke. From a system wide or portfolio level, banks have tried to broadly understand their exposure to climate change, its impacts in terms of drought or energy availability and the resultant water scarcity, livelihood or migration risks.¹⁴⁵³

Legally, banks are under no obligation to manage risks to the climate, the physical environment or society, they are however subject to the *Companies Act* 71 of 2008 which requires the mandate of the Social and Ethics Committee to address the ten

¹⁴⁴⁷ IFC date unknown <https://firstforsustainability.org/risk-management/implementing-ifc-environmental-and-social-requirements/establish-and-maintain-an-esms/ifc-environmental-and-social-performance-requirements/ifc-performance-standards/>; DNT 2020 <http://www.treasury.gov.za/publications/other/Sustainability%20technical%20paper%202020.pdf> 23.

¹⁴⁴⁸ DNT 2020 <http://www.treasury.gov.za/publications/other/Sustainability%20technical%20paper%202020.pdf> 25.

¹⁴⁴⁹ DNT 2020 <http://www.treasury.gov.za/publications/other/Sustainability%20technical%20paper%202020.pdf> 26.

¹⁴⁵⁰ DNT 2020 <http://www.treasury.gov.za/publications/other/Sustainability%20technical%20paper%202020.pdf> 26.

¹⁴⁵¹ DNT 2020 <http://www.treasury.gov.za/publications/other/Sustainability%20technical%20paper%202020.pdf> 26.

¹⁴⁵² DNT 2020 <http://www.treasury.gov.za/publications/other/Sustainability%20technical%20paper%202020.pdf> 26.

¹⁴⁵³ DNT 2020 <http://www.treasury.gov.za/publications/other/Sustainability%20technical%20paper%202020.pdf> 26.

Principles of the UN Global Compact.¹⁴⁵⁴ Many of the banks in South Africa as listed companies on the JSE are required to comply with King IV.¹⁴⁵⁵ This compels them as listed entities to publish integrated annual reports, which include "material aspects relating to the value creation processes and all forms of capital used or impacted by organisations: financial, manufactured, intellectual, natural, social and relationship, and human".¹⁴⁵⁶ This requirement means that significant risks such as climate change should be integrated into the strategy and operations of the bank before being reported.¹⁴⁵⁷ The Global Reporting Initiative (GRI) requires companies to provide detailed sustainability reports.¹⁴⁵⁸

As indicated above, banks since 2011 have voluntarily committed themselves to BASA's Principles for Managing Social and Environmental Risk which focuses on four key areas, namely:

- Own operations and procurement - recognising that members need to manage their own organisational impacts and promote responsible practice through their value chains;
- Lending practices - ensuring that credit and risk management policies give due recognition to environmental and social risks when making lending decisions, and lenders are thereby encouraged to adhere to environmental and social regulations and legislation;
- Investment practices - requiring members to maintain appropriate environmental and social due diligence guidelines for investee companies in high-risk industries; and

¹⁴⁵⁴ DNT 2020 <http://www.treasury.gov.za/publications/other/Sustainability%20technical%20paper%202020.pdf> 25.

¹⁴⁵⁵ DNT 2020 <http://www.treasury.gov.za/publications/other/Sustainability%20technical%20paper%202020.pdf> 25.

¹⁴⁵⁶ DNT 2020 <http://www.treasury.gov.za/publications/other/Sustainability%20technical%20paper%202020.pdf> 25.

¹⁴⁵⁷ DNT 2020 <http://www.treasury.gov.za/publications/other/Sustainability%20technical%20paper%202020.pdf> 25.

¹⁴⁵⁸ DNT 2020 <http://www.treasury.gov.za/publications/other/Sustainability%20technical%20paper%202020.pdf> 25.

- Products and services-developing sustainable technologies through the provision of lending facilities and financial products in support of the national agenda.¹⁴⁵⁹

These principles apply to all financial activities and their implementation is not mandatory.¹⁴⁶⁰ Enforcement or disclosure mechanisms are not built into the principles nor are there any consequences for non-adherence.¹⁴⁶¹ It is hoped that reputational attributes would be significant enough for compliance and shareholders through their proxy votes would seek compliance, also in the case of the issuing of green bonds.

4.3.2 Johannesburg Stock Exchange Green Bond Segment Debt Listing Requirements

On 25 October 2017 the Johannesburg Stock Exchange (JSE) launched a Green Bond Segment which provided a platform for capital that was ring-fenced for low carbon initiatives.¹⁴⁶² The JSE's introduction of a dedicated green bond segment was intended to provide companies with an effective tool to raise funds for investments in eligible sustainable projects.¹⁴⁶³ Alignment with international best practice such as the International Financial Reporting Standards¹⁴⁶⁴ (IFRS) and the International Capital Market Association (ICMA)¹⁴⁶⁵ was important to the JSE, the caveat being that such best practice would be contextualised within the South African specific rules pertaining to green bonds.¹⁴⁶⁶ The Debt Listing Requirements of the JSE¹⁴⁶⁷ provide a regulatory framework for green bonds under section 6.10 of the Green Segment

¹⁴⁵⁹ DNT 2020 <http://www.treasury.gov.za/publications/other/Sustainability%20technical%20paper%202020.pdf> 27.

¹⁴⁶⁰ DNT 2020 <http://www.treasury.gov.za/publications/other/Sustainability%20technical%20paper%202020.pdf> 27.

¹⁴⁶¹ DNT 2020 <http://www.treasury.gov.za/publications/other/Sustainability%20technical%20paper%202020.pdf> 27.

¹⁴⁶² BN 53 in GG 43248 of 24 April 2020 - Notice of publication for comment of proposed amendments to the JSE Debt Listing Requirements - Sustainability Segment - issued in terms of the *Financial Markets Act* 19 of 2012. Also see JSE 2020 <https://www.jse.co.za/articles/Pages/JSE-launches-Green-Bond-segment-to-fund-low-carbon-projects.aspx>; Liedtke *Engineering News*; Mutandiro *GroundUp*.

¹⁴⁶³ BN 53 in GG 43248 of 24 April 2020.

¹⁴⁶⁴ JSE 2020 [20Debt%20Listings%20Requirements%20\(14%20September%202018\).pdf](#).

¹⁴⁶⁵ BN 53 in GG 43248 of 24 April 2020.

¹⁴⁶⁶ BN 53 in GG 43248 of 24 April 2020.

¹⁴⁶⁷ Section 11.

requirements for securities.¹⁴⁶⁸ Best practice alignment is done with the GBP and ICMA guidelines and standards.¹⁴⁶⁹ Green bonds listed on the JSE require that the bond issuers disclose the use of proceeds and an independent advisor must be appointed to confirm that the bond can be classified as green according to the industry standards.¹⁴⁷⁰

The "Green Segment" of the JSE Debt Listings Requirements, whilst not providing for ESG, can provide for growth and the regulation of green bonds.¹⁴⁷¹ There is a strong correlation between the ESG requirements and the green segment regulatory framework. This green segment of the JSE Debt Listing Requirements of FMA provides for "green standards", a "green instrument", a "green segment", an "independent advisor" and the governing rules that are those of the "ICMA".¹⁴⁷² The green standards referenced are those of the GBP as may be amended from time to time, issued and governed by the ICMA (or any other standard acceptable to the JSE, in its discretion) in relation to the classification of green instruments.¹⁴⁷³ A green instrument means an instrument issued and rated by an independent advisor confirming that the green instrument complies with the green standard.¹⁴⁷⁴ Several green instruments have been developed by the market which are not necessarily green bonds but have the same objectives as green bonds and aligned with the green segment rules. The green segment of the JSE is the segment in which the JSE's Interest Rate Market lists these green instruments.¹⁴⁷⁵

Green bonds must comply with section 6.12 in which a critical core aspect of the requirements of issuance are that the independent advisor needs to have significant and appropriate experience in the provision of external reviews on similar green instruments as well as:

¹⁴⁶⁸ Section 6.10.

¹⁴⁶⁹ Section 6.10. Also see ch 3.

¹⁴⁷⁰ Section 6.11.

¹⁴⁷¹ Section 6.10; Bulbulia Engineering News; CER 2018 <https://cer.org.za/news/cer-calls-on-jse-to-include-climate-environmental-social-rules-for-listed-companies>.

¹⁴⁷² Section 6.10.

¹⁴⁷³ Section 6.10.

¹⁴⁷⁴ Section 6.10.

¹⁴⁷⁵ Section 6.10.

- a statement as to the Use of Proceeds which explains how such proceeds will be managed and allocated towards eligible green projects;
- a report from an independent advisor must be provided. The report must confirm that instruments are classified as green pursuant to the green standards; and the appointment of the independent advisor is critical in the assessment of the green bond. The independent advisor must be skilled in assessing the framework of the instruments' environmental objectives, with sufficient financial and market-specific expertise to perform a comprehensive assessment of the use of proceeds.

The independent advisor in terms of further requirements as per section 6.10 of the Debt Listing Requirements means an entity, removed and independent of the issuer, its directors, senior management and advisers, who has been appointed by the issuer confirming the green instrument status. It is also important to note that the independent advisor in terms of section 6.14 of the Debt Listing Requirements is an entity specialising in assessing the framework of the instruments' environmental objectives, with sufficient financial and market-specific expertise to perform a comprehensive assessment of the proceeds as stated in section 6.14(b) of the Debt Listing Requirements.¹⁴⁷⁶ Such expertise is demonstrable by the advisor as being affiliated with a relevant and widely recognised industry body such as the Climate Bonds Standard (or any other industry body acceptable to the JSE, in its discretion) and such advisor must have significant and appropriate previous experience in providing external reviews on green instruments.¹⁴⁷⁷

The JSE in February 2020 in an effort to drive sustainable investment and development, proposed a Sustainability Segment with the aim of expanding its current Green Bond Segment.¹⁴⁷⁸ The proposal would lead to amendments to its Debt Listing Requirements for the new Sustainability Segment which would broaden the sustainability instruments under the ICMA Green Bond Principles, Social Bond

¹⁴⁷⁶ Section 6(14)(b).

¹⁴⁷⁷ *Financial Markets Act* 19 of 2012 BN 53 in GG 43248 of 24 April 2020 JSE 2020 <https://www.jse.co.za/articles/Pages/JSE-launches-Green-Bond-segment-to-fund-low-carbon-projects.aspx>.

¹⁴⁷⁸ BN 53 in GG 43248 of 24 April 2020; also see JSE 2020 <https://www.jse.co.za/news/press-releases/jse-evolve-green-bond-segment-all-encompassing-sustainability-segment>. By January 2021 this proposal has as far as could be established not been finalised.

Principles and Sustainability Guidelines.¹⁴⁷⁹ The proposed new segment aims to provide a platform for companies and other institutions to raise funds for sustainable projects. the JSE intends to "broaden the options available to investors and offer issuers the ability to increase their participation in the broader impact sustainability markets".¹⁴⁸⁰ Nedbank was the first bank and a JSE listed company that issued green bonds.¹⁴⁸¹

In very broad strokes, South African law provides for the implementation of green bonds through common shared themes and principles that form a part of the green bond framework, the overall climate change strategy and section 24 of the Constitution. The green bond framework aligns with section 24 of the Constitution and section 2 of NEMA, with its own environmental objectives which include pollution prevention and control, biodiversity conservation and climate change adaptation.¹⁴⁸² These green bond objectives are similar to several policy initiatives and legal instruments that the government has implemented or aim to implement in relation to climate change mitigation and adaptation, sustainability, sustainable development, environmental social governance, use of clean energy, protection of the environment and emission reduction.

Green bonds finance green projects which at their cornerstone have the above-mentioned underlying themes, such as environmental protection and emission reduction. In the Voluntary Guidelines issued by ICMA it states that:

The GBP explicitly recognize several broad categories of eligibility for Green Projects, which contribute to environmental objectives such as: climate change

¹⁴⁷⁹ JSE 2020 <https://www.jse.co.za/news/press-releases/jse-evolve-green-bond-segment-all-encom-passing-sustainability-segment>.

¹⁴⁸⁰ JSE 2020 <https://www.jse.co.za/news/press-releases/jse-evolve-green-bond-segment-all-encom-passing-sustainability-segment>.

¹⁴⁸¹ Nedbank Group Ltd 2019 https://www.google.com/search?q=Nedbank+Group+The+JSE+Annual+ESG+Investor+Showcase&rlz=1C1CHBD_enZA770ZA770&oq=Nedbank+Group+The+JSE+Annual+ESG+Investor+Showcase&aqs=chrome..69i57.1387j0j7&sourceid=chrome&ie=UTF-8.

¹⁴⁸² ICMA 2018 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/Green-Bonds-Principles-June-2018-270520.pdf>.

mitigation adaptation, natural resource conservation, biodiversity conservation, and pollution and control.¹⁴⁸³

The JSE provides the platform upon which companies can effectively raise funds for investment in sustainable, climate resilient projects. As a dedicated segment for green bonds the Debt Listing Requirements provide the criteria for listing as green bonds. Section 6.10 of the JSE Debt Listing requirements provides for "green standards", a "green instrument", a "green segment", an "independent advisor" and the governance rules of "ICMA" further enhancing that South African law (at least for companies listed on the JSE) does provide for green bonds as a financial instrument that can be used in creating a climate resilient economy.¹⁴⁸⁴

4.3.3 *Pension Funds Act 24 of 1956*

The South African pension fund industry is the largest on the African continent with combined assets under management of US\$ 500 billion and ownership of 40% of the listed assets on the JSE.¹⁴⁸⁵ The *Pension Funds Act* 24 of 1956 does not provide for the use of green bonds as a financial instrument to finance low carbon infrastructure, It, however, makes provision for the ESG criterion to be used in investment decision making processes. Section 36(1)(bB) of the *Pensions Funds Act* seeks to limit the amount which a fund may invest in particular assets or in particular kinds of categories of assets, in attempt to de-risk potential risk in a single asset class.¹⁴⁸⁶ The aim of the investment regulation is to ensure that the savings South Africans contribute towards their retirement is invested in a prudent manner that not only protects the retirement fund member, but is channelled in ways that achieve economic development and growth.¹⁴⁸⁷ GN R183 issued in terms of the *Pension Funds*

¹⁴⁸³ ICMA 2018 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/Green-Bonds-Principles-June-2018-270520.pdf>.

¹⁴⁸⁴ *Financial Markets Act* 19 of 2012 BN 53 in GG 43248 of 24 April 2020 JSE Debt Listing Requirements 2020 <https://www.jse.co.za/content/JSERulesPoliciesandRegulationItems/JSE%20Debt%20Listings%20Requirements%20Service%20Issue%2025.pdf>.

¹⁴⁸⁵ IFC Promoting Sustainable Investing in South Africa's \$500 Billion Pension Fund Market and Beyond https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/sustainability-at-ifc/publications/sba-project-south-africa-pension-fund.

¹⁴⁸⁶ *Pension Funds Act* 24 of 1956 (GN R98).

¹⁴⁸⁷ GN R98 in GG 162 of 26 January 1962, as amended.

*Act*¹⁴⁸⁸ came into effect in April 2011 with the aim of limiting the extent to which retirement funds may invest in particular asset classes seen as risky. The main purpose of the *Pension Funds Act* 24 of 1956 and GN R183 is to protect members from poorly diversified investment portfolios that were not risk adjusted to investments. Risks, could for example, include issues such as climate change or the calls for disinvestment in fossil fuels. Regulation 28 of GN R98 of 1962 as amended by GN R183 (hereinafter Regulation 28) applies to a considerable investment portfolio in excess of R1.1 trillion and is also extended to the Government Employees Pension Fund totalling more than R1 trillion in assets.¹⁴⁸⁹ The Regulation states that:

Prudent investing should give appropriate consideration to any factor which may materially affect the sustainable long-term performance of their investments, including those of an environmental, social and governance character. This applies across all asset classes and should promote the vested interest of the fund in a stable and transparent environment.¹⁴⁹⁰

This is reinforced by the requirements of a board of the Pension Fund,¹⁴⁹¹ in regulation 28(2)(c)(ix):

...before making an investment in and while invested in an asset, [to] consider any factor which may materially affect the sustainable long-term performance of the asset including, but not limited to, those of an environmental, social and governance nature.¹⁴⁹²

The consideration now means that some action must have been taken to show why a particular investment was made or not made with due consideration to ESG factors. Anyone delegated with investment-related powers by the board should also adhere to the above, the board is, however, not absolved of their fiduciary responsibility. The Registrar of Pension Funds in 2018 published for public comment a draft directive entitled "Sustainability Reporting and disclosure requirements" to be issued in terms

¹⁴⁸⁸ GN R183 in GG 34070 of 4 March 2011 (GN R183).

¹⁴⁸⁹ Amendment of Regulation 28 of GN R98.

¹⁴⁹⁰ *Pension Funds Act*, 1956: Amendment of Regulation 28 of the Regulations made under section 36 4 March 2011 22.

¹⁴⁹¹ Instituted in terms of s 7A of the *Pension Funds Act*.

¹⁴⁹² *Pension Funds Act*, 1956: Amendment of Regulation 28 of the Regulations made under section 36 4 March 2011 10.

regulation 28(8)(2)(b).¹⁴⁹³ Whilst the directive has not been published in its final and binding form, it is likely that it may be substantially different from the draft form.¹⁴⁹⁴ This directive by the registrar (correctly so) proposed requirements for reporting by funds subject to the Act, to adhere to the ESG principles.¹⁴⁹⁵ The directive also required that funds would be required by law to state in their Investment Policy Statement (IPS) how their investment approach had been designed to ensure "the sustainable long-term performance of the fund's assets", under section 6 of the Investment Policy Statement Requirements published in terms of the *Pension Funds Act*:

- how its investment approach ensures the sustainable long-term performance of its assets;
- its policy in applying environmental, social and governance (ESG) to the assets it intends to acquire;
- its policy in regard to the application of its sustainability criteria when deciding on the acquisition of assets;
- how regularly it measures the compliance of its assets with these ESG factors and its sustainability criteria, in particular, the manner in which broad based black economic empowerment is advanced by the business;
- its active ownership;
- where a pension fund holds assets that limit the application of ESG factors, the sustainability criteria, or the full application of an active ownership policy, the investment statement must state the reasons as to why the limitation is to the advantage of both the pension fund and its membership. Alternatively, the investment policy must set out the remedial action the fund has taken or intends taking to rectify the position;
- every pension fund must make available on request and at no cost, to each member and, if applicable, to each participating employer, its investment policy statement; provided that the investment policy statement may be abridged to reflect those assets relating to a category of members as long as the

¹⁴⁹³ FSB 2018 <https://webcache.googleusercontent.com/search?q=cache:oPYnqB2wWDYJ:https://www.fsca.co.za/Regulatory%2520Frameworks/Temp/Directive%2520No.%2520%2520XXX%2520of%25202018%2520.%2520Sustainable%2520investments.27.03.2018.docx+&cd=1&hl=en&ct=clnk&gl=za> 1.

¹⁴⁹⁴ Anon 2019 https://justshare.org.za/wp-content/uploads/2019/04/2019_Pension-fund-legal-opinion-by-Fasken.pdf 27.

¹⁴⁹⁵ FSB 2018 <https://webcache.googleusercontent.com/search?q=cache:oPYnqB2wWDYJ:https://www.fsca.co.za/Regulatory%2520Frameworks/Temp/Directive%2520No.%2520%2520XXX%2520of%25202018%2520.%2520Sustainable%2520investments.27.03.2018.docx+&cd=1&hl=en&ct=clnk&gl=za> 1.

requirements of paragraphs 6 and 7 in relation to those assets are contained in the abridged investment policy statement.¹⁴⁹⁶

Suggestions were also made that members of the fund should not be constrained in their request for access to the fund's investment policy.¹⁴⁹⁷ Such information should be made available on the company's website if one exists.¹⁴⁹⁸ Members who are unable to access such information, may submit a complaint to the pension funds adjudicator citing that the boards failure to disclose and make such information available amounted to "improper exercise of its powers".¹⁴⁹⁹ There is alignment with King IV in this regard which states that "the responsible investment code adopted by the institutional investor and the application of its principles and practices should be disclosed".¹⁵⁰⁰

Further to this, risks associated with climate change which may have some bearing on the "likely long-term" performance of the investment are part of the due diligence and duty of care process which must be considered and the lack thereof is likely to amount to a breach of duty of care and diligence.¹⁵⁰¹ King IV states that boards should align their investment decision making with:

- Principle 11: The board should govern risk in a way that supports the fund in setting and achieving its strategic objective and

¹⁴⁹⁶ FSB 2018 <https://webcache.googleusercontent.com/search?q=cache:oPYnqB2wWDYJ:https://www.fsca.co.za/Regulatory%2520Frameworks/Temp/Directive%2520No.%2520%2520XXX%2520of%25202018%2520.%2520Sustainable%2520investments.27.03.2018.docx+&cd=1&hl=en&ct=clnk&gl=za> 4.

¹⁴⁹⁷ FSB 2018 <https://webcache.googleusercontent.com/search?q=cache:oPYnqB2wWDYJ:https://www.fsca.co.za/Regulatory%2520Frameworks/Temp/Directive%2520No.%2520%2520XXX%2520of%25202018%2520.%2520Sustainable%2520investments.27.03.2018.docx+&cd=1&hl=en&ct=clnk&gl=za> 4.

¹⁴⁹⁸ FSB 2018 <https://webcache.googleusercontent.com/search?q=cache:oPYnqB2wWDYJ:https://www.fsca.co.za/Regulatory%2520Frameworks/Temp/Directive%2520No.%2520%2520XXX%2520of%25202018%2520.%2520Sustainable%2520investments.27.03.2018.docx+&cd=1&hl=en&ct=clnk&gl=za> 4.

¹⁴⁹⁹ FSB 2018 <https://webcache.googleusercontent.com/search?q=cache:oPYnqB2wWDYJ:https://www.fsca.co.za/Regulatory%2520Frameworks/Temp/Directive%2520No.%2520%2520XXX%2520of%25202018%2520.%2520Sustainable%2520investments.27.03.2018.docx+&cd=1&hl=en&ct=clnk&gl=za> 4.

¹⁵⁰⁰ Anon 2019 https://justshare.org.za/wp-content/uploads/2019/04/2019_Pension-fund-legal-opinion-by-Fasken.pdf 22.

¹⁵⁰¹ Anon 2019 https://justshare.org.za/wp-content/uploads/2019/04/2019_Pension-fund-legal-opinion-by-Fasken.pdf 16.

- Principle 17: The board should ensure that responsible investment is practiced by the fund to promote the good governance and the creation of value by the companies in which it invests.¹⁵⁰²

Boards need to have competent members, be they "non-executive" or acting on a "part-time" basis, the member is obligated to apply their mind to the issues before the board.¹⁵⁰³ A member may not delegate his or her duties, remain ignorant of the issues or blindly accept information and advice must be based on due diligence in the form of one applying their mind to the matters before the board when required to do so.¹⁵⁰⁴ One has to earn his or her fees so to speak. For example, climate change information which may affect the investment must reasonably be acquired so as to make an informed decision when exercising the fund's investment powers.¹⁵⁰⁵

Boards of pension funds must consider material financial risks which may arise from climate change impacts and the lack thereof may amount to a breach of duty by the board under both common law principles and Regulation 28.¹⁵⁰⁶ In practice Regulation 28:

[P]ermits the diversification and allocation of 25 per cent as opposed to 20 percent of the previous version, of pension funds to be invested in foreign investments as well as an additional 5 per cent to be invested in other African-country asset classes.¹⁵⁰⁷

¹⁵⁰² Institute of Directors 2016 https://cdn.ymaws.com/www.iodsa.co.za/resource/collection/684B68A7-B768-465C-8214-E3A007F15A5A/IoDSA_King_IV_Report_-_WebVersion.pdf 41.

¹⁵⁰³ Anon 2019 https://justshare.org.za/wp-content/uploads/2019/04/2019_Pension-fund-legal-opinion-by-Fasken.pdf 16. In terms of s 7A(3)(b) a board member must retain the prescribed levels of skills and training referred to in paragraph (a) throughout that board member's term of appointment. This provides that every board member must attain such levels of skills and training as may be prescribed by the registrar by notice in the Gazette, within six months from the date of the board member's appointment.

¹⁵⁰⁴ Anon 2019 https://justshare.org.za/wp-content/uploads/2019/04/2019_Pension-fund-legal-opinion-by-Fasken.pdf 16. In terms of s 7A(4)(b) of the *Pension Funds Act* 24 of 1956 a board member on becoming aware of any material matter relating to the affairs of the pension fund which, in the opinion of the board member, may seriously prejudice the financial viability of the fund or its members, inform the registrar thereof in writing.

¹⁵⁰⁵ Anon 2019 https://justshare.org.za/wp-content/uploads/2019/04/2019_Pension-fund-legal-opinion-by-Fasken.pdf 16.

¹⁵⁰⁶ Anon 2019 https://justshare.org.za/wp-content/uploads/2019/04/2019_Pension-fund-legal-opinion-by-Fasken.pdf 28.

¹⁵⁰⁷ Bradfield and Munro 2015 *SAJEMS* 410-424.

The Code for Responsible Investing in South Africa¹⁵⁰⁸ (CRISA) gives effect to Regulation 28 as a voluntary process in enabling the implementation of ESG principles.¹⁵⁰⁹ It provides guidance on how institutional investors should execute investment analysis and investment activities and promote sound governance through the use of ESG principles.¹⁵¹⁰ Alignment is made with the voluntary UN Principles for Responsible Investing¹⁵¹¹ (UNPRI) and it commits to exploring the need for increased focus on disclosure requirements. A business plan and finance model is in development to increase CRISA's impact ability to deliver on its objectives.¹⁵¹²

In terms of the international standards and guidelines the *Pension Funds Act* elevates verification and reporting as critical. Verification may be required by the registrar from an applicant in furnishing further information, or require such information to be verified.¹⁵¹³ A pension fund may be required by the registrar to verify information supplied to the registrar if so deemed, resulting in the lapse of the application if not done so within 60 days.¹⁵¹⁴ Reports may be issued or requested by the registrar or applicants of licences as stated within the Act. They may be written or as in some cases where there is no specification for this requirement, other forms of reports may be requested.¹⁵¹⁵ Reference to "special reports" to the registrar is made in the case of amalgamations of transactions.¹⁵¹⁶ The appointment of an auditor similar to the appointment of an approved verifier must be reported upon in terms of their

¹⁵⁰⁸ IoDSA 2021 <https://www.iodsa.co.za/page/crisaresourcecentr>.

¹⁵⁰⁹ DNT 2020
<http://www.treasury.gov.za/publications/other/Sustainability%20technical%20paper%202020.pdf> 32.

¹⁵¹⁰ DNT 2020
<http://www.treasury.gov.za/publications/other/Sustainability%20technical%20paper%202020.pdf> 32.

¹⁵¹¹ To be found at PRI 2021 <https://www.unpri.org>.

¹⁵¹² DNT 2020
<http://www.treasury.gov.za/publications/other/Sustainability%20technical%20paper%202020.pdf> 32.

¹⁵¹³ Chapter II 5(a)(ii) *Pension Funds Act* 1956.

¹⁵¹⁴ Chapter II 5(ii) *Pension Funds Act* 1956.

¹⁵¹⁵ Chapter III 9 (4)(a) *Pension Funds Act* 1956.

¹⁵¹⁶ Chapter III 14 (1)(b) *Pension Funds Act* 1956.

obligations on reporting of the financial condition of the fund.¹⁵¹⁷ Penalties may be imposed for non-submission of reports.¹⁵¹⁸

It seems therefore that the *Pension Funds Act* would require of boards of pension funds to make due consideration of climate-related risks as the boards of such funds have a duty to consider material financial risks that may result from non-consideration of such risks. As a material financial risk, climate change considerations should always inform any decision in the investable opportunity and this would also require that ESG principles must be at the forefront of such decision making. In alignment with international standards and guidelines the *Pension Funds Act* makes a requirement for reporting requirements to be made between the registrar and the minister. Specific rules are made for the appointment of auditors and valuers.

4.3.4 *Income Tax Act 58 of 1962*

The *Taxation Laws Amendment Act 13 of 2017 (Amendment Act)* amended the *Income Tax Act 58 of 1962* inserting sections 12K and 12L. Section 12K provided for exemptions of certified emission reductions and under section 12L introduces a special allowance for energy efficiency savings.¹⁵¹⁹ The "exemption of certified emission reductions" granted income tax revenue exemption to the sale of certified emissions reductions arising from the Clean Development Mechanism (CDM) projects¹⁵²⁰ in the context of the *Kyoto Protocol*.¹⁵²¹ This measure has been applied since February 2009 and was extended until December 2020.¹⁵²² Section 12L grants income tax reductions for energy efficiency savings from certified baselines based on "energy efficiency savings certificates" issued by an organ determined by Regulations from the Ministry of Mineral Resources and Energy.¹⁵²³ The regulations are aligned with the *National Energy Act 34 of 2008*. The measures apply to the taxable income

¹⁵¹⁷ Chapter III 9(4)(a) *Pension Funds Act* 1956.

¹⁵¹⁸ Chapter VI 37(2) *Pension Funds Act* 1956.

¹⁵¹⁹ *Taxation Laws Amendment Act* 17 of 2009.

¹⁵²⁰ See Department of Energy 2020 http://www.energy.gov.za/files/esources/kyoto/kyoto_sa.html.

¹⁵²¹ Nachmany *et al* *The GLOBE climate legislation study* 506.

¹⁵²² Section 18 of the *Taxation Laws Amendment Act* 34 of 2009.

¹⁵²³ Nachmany *et al* *The GLOBE climate legislation study* 506. Also see Du Plessis 2015 *SAJS* 1-8.

of any persons in any year of assessment until 1 January 2020.¹⁵²⁴ The *Amendment Act* does not provide for green bonds but does provide some relief for energy efficiency. An *ad valorem* carbon dioxide emissions tax which was introduced by the 2009 Budget was a tax on new passenger motor vehicles introduced as a carbon mitigation measure.¹⁵²⁵ This tax was initially applied to new passenger cars; it has been extended to commercial vehicles.¹⁵²⁶ The tax was applied to new passenger cars based on their certified carbon dioxide at R75 per g/km for each g/km above 120 g/km. This is an additional emissions tax on luxury new vehicles.¹⁵²⁷

The *Income Tax Act* 58 of 1962 also provides for tax relief for renewable energy project infrastructure¹⁵²⁸ as well as for environmental expenditure, conservation and maintenance.¹⁵²⁹ The possibility of tax relief may entice developers to introduce for example renewable energy project and apply for green bonds, if they know that they will be allowed tax exemptions. Over and above the legislation the JSE also issued Listing Requirements for green bonds.

4.3.5 Local government legislation

Municipalities historically financed their capital expenditure through a combination of local tax revenues and credit instruments.¹⁵³⁰ These include operating budget surpluses that derive from property taxes, user charges and other local taxes.¹⁵³¹ Credit financing has been used to finance short to long-term infrastructure planning, but with growing urban migratory patterns in most African countries these sources are not sufficient.¹⁵³² Expenditure needs or demands arise when revenue generated

¹⁵²⁴ Nachmany *et al* *The GLOBE climate legislation study* 506.

¹⁵²⁵ Nachmany *et al* *The GLOBE climate legislation study* 506.

¹⁵²⁶ Nachmany *et al* *The GLOBE climate legislation study* 506.

¹⁵²⁷ Nachmany *et al* *The GLOBE climate legislation study* 506. See also the discussion on the *Carbon Tax Act* 15 of 2019 para 5.4.2.13 below.

¹⁵²⁸ Sections 12B and 12J. Also see Du Plessis *Energy Law in South Africa* para 295.

¹⁵²⁹ Sections 37B and 37C.

¹⁵³⁰ Mahabir and Mabena "Identifying the funding constraints in municipal capital investments" Chapter 9 245.

¹⁵³¹ Mahabir and Mabena "Identifying the funding constraints in municipal capital investments" Chapter 9 245.

¹⁵³² Mahabir and Mabena "Identifying the funding constraints in municipal capital investments" Chapter 9 245.

from local sources and borrowing is less than what is required, which leads to gaps in funding infrastructural developments and constitutionally mandated services.¹⁵³³ Section 4(2)(d) of the *Local Government: Municipal Systems Act* 32 of 2000 (*Municipal Systems Act*) stipulates that municipalities in carrying out their mandate are compelled to "strive to ensure that municipal services are provided to the local community in a financially and environmentally sustainable manner".¹⁵³⁴ The provision of these services as per section 73(2)(d) of the *Municipal Systems Act* must be environmentally sustainable and renewable energy could be extrapolated to mean that sustainable energy includes renewable energy.¹⁵³⁵ In October 2020 the Minister of Mineral Resources and Energy amended the New Generation Capacity Regulations to allow municipalities to generate their own electricity or to buy from independent producers.¹⁵³⁶ Municipalities already experience financial constraints which may hamper they buying of electricity from independent produces. The Financial and Fiscal Commission already in 2011 found that:

The current quantum of infrastructure grants to local government does not cover the difference between the current capital expenditure needs of local government and own revenue sources. Therefore, the review found, the combination of own revenue contributions, municipal borrowing and grants is insufficient to fund local government infrastructure needs.¹⁵³⁷

It is not only financial constraints, as there is generally a lack of synchronisation between environmental law, energy law and local government law which potentially results in missed opportunities for renewable energy financing mechanisms such as green bonds which could provide for the gap in infrastructural financing.¹⁵³⁸ There is an urgent need to expand the investment instruments at the municipal level as a

¹⁵³³ Mahabir and Mabena "Identifying the funding constraints in municipal capital investments" Chapter 9 245.

¹⁵³⁴ Du Plessis and Murombo "Energy" 892.

¹⁵³⁵ Du Plessis and Murombo "Energy" 892.

¹⁵³⁶ In terms of s 35(4) of the *Electricity Regulation Act* 4 of 2006 – GN 1093 in GG 43810 of 16 October 2020 amending GN R 399 in GG 34262 of 4 May 2011 and GN R 1366 in GG 40401 of 4 November 2016. Also see Mans 2010 http://www.isocarp.net/Data/case_studies/1651.pdf; ESI Africa 2020 <https://www.esi-africa.com/industry-sectors/generation/cape-town-makes-a-case-before-high-court-for-electricity-generation/>.

¹⁵³⁷ Mahabir and Mabena "Identifying the funding constraints in municipal capital investments" Chapter 9 246.

¹⁵³⁸ Du Plessis and Murombo "Energy" 891.

result of the widening demand for local infrastructure and there is continued pressure on municipal revenue instruments that support capital expenditure to generate more income for the municipalities.¹⁵³⁹

The *Local Government: Municipal Finance Management Act* 56 of 2003 (MFMA) states in section 2 as its objective that it aims to secure sound and sustainable management of the fiscal and financial affairs of municipalities and municipal entities by establishing norms and standards and other requirements.¹⁵⁴⁰ As stated before, in securing sound and sustainable fiscal models, municipalities are now forced to seek alternative sources of funding in trying to meet the objectives of their municipalities as well as meeting those of the "green economy". The United Nations Environment Programme (UNEP) provides a definition for this "green economy" by defining it as an economy that results in "improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities".¹⁵⁴¹

The characteristics of a green economy are:

- recognition of the value of, and investment in natural capital;
- recognition of the linkages between the preservation of natural capital and poverty alleviation;
- a focus on job creation and the enhancement of social equity;
- substitution of renewable energy and low-carbon technologies for fossil fuels;
- promotion of enhanced resource and energy efficiency; and
- delivery of more sustainable urban living and low-carbon mobility.¹⁵⁴²

To build on this "green economy", there needs to be a confluence of finance between public-finance and the private sector finance. The 1998 *White Paper* states that municipalities are, "... responsible for economic and physical planning and, as such, are concerned with the supply and use of energy".¹⁵⁴³ This then means that private

¹⁵³⁹ Mahabir and Mabena "Identifying the funding constraints in municipal capital investments" Chapter 9 246.

¹⁵⁴⁰ Section 2 of MFMA 56 of 2003.

¹⁵⁴¹ Humby "Local economic development and the pursuit of a green economy" 209.

¹⁵⁴² Humby "Local economic development and the pursuit of a green economy" 209.

¹⁵⁴³ Du Plessis and Murombo "Energy" 892.

finance is critical to the green economy, hence the need for the use of green bonds in the municipal finance structure. In the context of the municipality, private finance is required to supplement the municipal debt crisis often as a result of non or late payment from rate-payers who may default on their payment for municipal services.¹⁵⁴⁴ The Financial Census on Municipalities Report places a figure of R72,4 billion in debt owed to municipalities.¹⁵⁴⁵ This rise in municipal debt in turn has been driven by rising consumer debt and has been compounded by a very low growth rate in the economy.¹⁵⁴⁶ Municipalities therefore need to seek alternative funding for their infrastructural development which is important for economic growth and job creation, critical issues in South Africa.

Municipalities often encounter difficulties with the implementation of environmental projects that require substantial amounts of capital.¹⁵⁴⁷ Financial implications which impose financial obligations on a municipality beyond three years as per the requirements of section 33 of the MFMA, compel the municipality to seek public participation in the process and the views of the National Treasury must be obtained.¹⁵⁴⁸ This is a cumbersome process which may result in contracts being "artificially constrained to three years, which may limit opportunities, since external parties contracting with municipalities may require security of contractual rights extending beyond this limited time frame".¹⁵⁴⁹ Environmental work by its very nature is long-term and requires forward planning. This ideally makes it suitable to the bond market which is also based on long-term investment.¹⁵⁵⁰ Environmental work is incompatible with the current MFMA model of financing such work within the municipalities, as it provides more for short term investments. Conservation work and renewable energy projects which are sustainable development projects show their significance over a much longer period of time, which is counter to the short cycles

¹⁵⁴⁴ Stats SA 2019 <http://www.statssa.gov.za/?p=12255>.

¹⁵⁴⁵ Stats SA 2019 <http://www.statssa.gov.za/?p=12255>.

¹⁵⁴⁶ Stats SA 2019 <http://www.statssa.gov.za/?p=12255>.

¹⁵⁴⁷ Mosdell "A personal legal perspective on the City of Cape Town" 980.

¹⁵⁴⁸ Mosdell "A personal legal perspective on the City of Cape Town" 980.

¹⁵⁴⁹ Mosdell "A personal legal perspective on the City of Cape Town" 980.

¹⁵⁵⁰ Mosdell "A personal legal perspective on the City of Cape Town" 980.

of municipalities that are faced by an election cycle every five years.¹⁵⁵¹ Projects that have wider community social economic benefits are often perceived as fruitless and wasteful expenditure.¹⁵⁵² This interpretation may be that from an accounting practice the gains do not show an immediate return on investment, but rather may be seen as too long an investment in relation to projects which may be more immediate on return on investment (ROI).¹⁵⁵³ The investment system has principally grown out of "short- termism" fuelled by CEOs seeking to extend their mandates.

Section 230A of the Constitution states that:

A municipal Council may, in accordance with national legislation-

- raise loans for capital or current expenditure for the municipality, but loans for current expenditure may be raised only when necessary for bridging purposes during a fiscal year; and
- bind itself and a future Council in the exercise of its legislative and executive authority to secure loans or investments for the municipality.

National legislation referred to in section 230A(1) may be enacted only after any recommendations of the Financial and Fiscal Commission have been considered.¹⁵⁵⁴

The MFMA determines the rules and provides for municipalities to incur long-term debt under certain prescribed circumstances such as capital expenditure on property, plant or equipment, refinancing of existing debt or for the purposes of achieving local government objectives as per the objectives set out in the Constitution.¹⁵⁵⁵ In providing for constitutionally mandated services, such as water, electricity and sanitation, municipalities are currently faced with an unprecedented growth of rural to urban migration in which the projection by the United Nations Population Division report states that South Africa will have as much as 75 per cent of the population living in cities by 2050.¹⁵⁵⁶

¹⁵⁵¹ Mosdell "A personal legal perspective on the City of Cape Town" 980.

¹⁵⁵² Mosdell "A personal legal perspective on the City of Cape Town" 980.

¹⁵⁵³ Mosdell "A personal legal perspective on the City of Cape Town" 980.

¹⁵⁵⁴ Constitution, s 230A.

¹⁵⁵⁵ MFMA, s 46.

¹⁵⁵⁶ UN Department of Economic and Social Affairs 2019 <https://population.un.org/wup/Publications/Files/WUP2018-Report.pdf> 35.

The City of Cape Town has been able to raise a green bond to finance adaptation and mitigation initiatives in the city which meet their Climate Change Strategy.¹⁵⁵⁷ This bond was compliant with the MFMA providing a basis for other municipalities to raise green bonds for the financing of their mitigation and adaptation strategies.

4.3.6 Preliminary Observations

Some of the policy documents provide for the core principles of climate change and only one provides for green bonds directly. Whilst there is a general consensus on providing for a low carbon economy as an underlying theme throughout the documents, there is a general deficiency of the financing of such an economy and how it will be achieved. Some of the legislation have enabling provisions which open the door for green bonds. There however is a platform at the JSE upon which green bonds can be provided for in a regulatory manner.

4.4 Conclusion

This chapter analysed the South African legal framework for green bonds as a financial mechanism that can be implemented to catalyse low carbon and resilient infrastructure. Some of the legislative documents analysed in this chapter have been found to be explicit in their provision for green bonds whilst others have generally been found to provide for the broader themes of green bonds such as sustainable development, sustainability and protection of the environment.

The *National Climate Change Response White Paper* of 2011 as a starting point in this exposition was found to make direct reference to green bonds and also called for the transition to the use and increase in investment of renewable energy sources. It is the only policy document refers to green bonds directly and subsequent policy documents did not follow this example. The mobilisation of climate finance through the use of "specialised environmental funds" and what is termed "new capital market

¹⁵⁵⁷ City of Cape Town 2017 https://saveelectricity.org.za/wp-content/uploads/2018/01/climate_change_policy.pdf. Also see De Lille 2017 <http://www.capetown.gov.za/media-and-news/Green%20pays%20City>.

innovations, such as climate or green bonds" is recognition that green bonds may be a necessary financial tool in the climate mitigation challenge and its inherent attributes meet the sustainability goals of the NDP and other plans that seek the mobilisation of capital for this very purpose. The energy sector has been consistently identified in various mitigation strategies as having the most significant potential for mitigation of climate change.

Green infrastructural development is important in mitigation efforts and building a climate resilient economy. The Near-term Priority Flagship Programmes in the *National Climate Change Response White Paper* are most suitable for bond funding and as large infrastructural builds, they allow for asset-liability matching, making them a good fit with institutional investors long-term liabilities. The NDP recognises the use of debt instruments as integral in mobilising resources for climate change mitigation. Green bonds are debt instruments that ideally match the long-term objectives of the NDP. The sector reforms required in energy will need to be financed and whilst the NDP is silent on how this is to be achieved, the reforms will assist in the transition to a low carbon economy whilst having the dual effect of eliminating poverty and reducing inequality. In financing many of the NDP objectives, developmental finance, project finance, equity finance, and debt finance are seen as providing a crucial role in promoting industrial policy towards a low carbon and resilient economy.

The *Climate Change Bill*, whilst not making reference to green bonds, is inextricably linked to international climate change law and its objectives. Climate finance and technology are largely omitted from the Bill, but it presents an opportunity for the government to connect South Africa's international climate change commitments to national laws, policy, regulation, standards and targets. Sustainable development informs the underbelly of many legislative provisions and law and this is an attempt to re-orientate South Africa's development path in a more sustainable direction. The IRP does not go far enough in ambition as renewables will supposedly account for only 21 per cent of electricity supply by 2030. One can proffer the thought that in planning for an increase in renewable energy technologies, the planners did not factor in the exponential growth of renewables and therefore their exponential decrease in

costs. The *Pension Funds Act* 24 of 1956 whilst not directly providing for green bonds is an important legal instrument in the introduction of the ESG criterion to be used in the investment decision making process. Regulation 28 of GN R98 of 1962 (issued in terms of the *Pension Funds Act*) aims to limit the extent to which retirement funds may invest in particular asset classes seen as risky, this could, for example, include climate change related matters and technology to abate the impacts of climate change. The launch by the JSE of the Green Bond Segment provided companies with an effective tool to raise funds for investments in sustainable projects culminating in a regulatory framework for green bonds under the Green Segment requirements for securities. Several green bonds have been raised through this framework. The JSE requirements subscribe to the GBP and the ICMA. However, these requirements apply to listed companies only and there is no formal regulatory framework focusing on green bonds specifically in relation to for example non-listed companies or government spheres or departments.

Bonds are regulated by the FMA and are therefore not a new financial instrument in the South African financial markets landscape. Municipalities with capacity to raise and administer green bonds should be allowed to raise green bonds under a well understood regulatory environment and under the direct auspices of the National Treasury to avoid misuse of funding. Bonds are well understood and as the largest bond market on the continent, green bonds can be developed under current legislation to factor in this emerging criterion of green within the bond concept.

Chapter 5

Lessons from other jurisdictions

5.1 Introduction

At the conclusion of chapter four the analysis of the applicable laws and policies indicated that the current regulatory effort surrounding green bonds as a mitigation measure in the quest for energy sector reform in South Africa still needs some transformation. Three foreign jurisdictions, namely Nigeria, Kenya, and the United Kingdom are investigated in relation to their climate change policies and legislation, and the regulation of the green bond sector in order to determine lessons for South Africa. In the first instance the linkages between climate change mitigation in the listed countries will be elaborated upon. Hereafter, the relevant laws and/or policies applicable to each jurisdiction will be discussed. In the final instance the focus will fall specifically on the content of the efforts in the foreign jurisdictions on the implementation and regulation of green bonds as driver for climate change mitigation via funding of energy sector reform. These approaches will be applied in chapter six to make recommendations for South African law.

5.2 Nigeria

5.2.1 Climate change legal framework – mandate for climate change mitigation

Nigeria is the largest economy in Africa with a GDP of US\$ 376.284 Billion, 70 per cent of its income is derived from the sale of crude oil making it the sixth largest producer of crude oil globally.¹⁵⁵⁸ It is a coastal country with possibilities of renewable energy technologies being implemented and has the largest population on the continent, estimated at 206,14 million people making one in five Africans Nigerian.¹⁵⁵⁹ Nigeria has well over three hundred ethnic groups each with their own distinct

¹⁵⁵⁸ Oyekunle 2019 <https://www.africanexponent.com/post/9786-top-six-countries-with-the-biggest-gdp-in-africa>; NNPC 2020 <https://www.nnpcgroup.com/NNPC-Business/Upstream-Ventures/Pages/Oil-Production.aspx>.

¹⁵⁵⁹ World Population Review 2020 <https://worldpopulationreview.com/countries/nigeria-population>.

language and social customs and beliefs.¹⁵⁶⁰ This is the seventh largest population in the world.¹⁵⁶¹ Nigeria is an extremely important country on the continent, not only as the largest economy, with the largest reserves of gas, but also for the purposes of this study the government of Nigeria relies on 85 percent of its revenues from the energy sector (oil and gas) with agriculture and manufacturing contributing less significantly though agriculture employs the most number of people.¹⁵⁶² It provides an interesting study as to what would the impact of climate change be on Nigeria if this single source of revenue was to be decimated by the impacts of climate change or the collapse of the oil price. It is with this in mind that perhaps Nigeria should provide leadership in the charge towards the use of low carbon and renewable energy sources breaking its overdependence on fossil fuels such as oil and gas which will have untold consequences in terms of climate change and disastrous consequences on the economy if climate change impacts are not equated into the policy and legal framework.

Africa will be the most severely affected continent by climate change as stated in the IPCC's Fourth Assessment Report. This will be exacerbated by weak macro-economic issues and a lack of robust adaptation and mitigation strategies in place.¹⁵⁶³ The effects of climate change will and have permeated through all sectors of the economy bringing into question and presenting challenges for sustainable development in terms of sustainability, equity and economic growth for all Nigerian citizens.¹⁵⁶⁴ The Fifth Assessment Report emphasises the vulnerability of African economies, such as Nigeria, to be linked "to existing developmental challenges such as endemic poverty, complex governance, limited access to capital, including markets, infrastructure and

¹⁵⁶⁰ Anon 1986 *Africa Insight* 128-131.

¹⁵⁶¹ World Population Review 2020 <https://worldpopulationreview.com/countries/nigeria-population>.

¹⁵⁶² Harvard Library (Bluebook) 2020 <https://guides.library.harvard.edu/bluebook-guide>; Oluduro 2014 *J Law, Policy Glob* 168.

¹⁵⁶³ Ajayi 2017 *JICL* 106. Also see Adejonwo-Osho "Nigeria's commitments under climate change Paris Agreement" 61-82.

¹⁵⁶⁴ Akinyemi, Ogundipe and Alege 2014 *J Environ Earth Sci* 48.

technology, ecosystem degradation, and natural¹⁵⁶⁵ [and man-made¹⁵⁶⁶] disasters and conflicts".¹⁵⁶⁷ It has been found that "although adaptation options, including traditional coping strategies theoretically are available, in practice the human, infrastructural and economic response capacity to effect timely response actions may well be beyond the economic means of some countries".¹⁵⁶⁸ The Niger Delta is known for oil exploration and disastrous impacts on human health and the environment.¹⁵⁶⁹ Researchers at the National Institute for Fresh Water Fisheries in Nigeria, have said that:

Gas flaring leads to higher temperature and the expansion of the sea water as it warms; this in turn leads to rise in the sea levels. ... resulting in more erosion and less sediment will be able available for the build-up of the delta front, so the delta will shift inland. With a rapidly rising sea level, the shortage of sediment could become so severe that the delta will 'drown' and disappear under water permanently.¹⁵⁷⁰

Climate change has been described as a "wicked" problem: it has enormous interdependencies, uncertainties, and conflicting stakeholders resulting in the inability to formulate a single problem or solution.¹⁵⁷¹ The Vision 20:2020 identifies the environment as a strategic objective in which Nigeria must "halt environmental degradation, promote renewable energy and climate change mitigation and adaptation and this objective is supported by ensuring environmental sustainability".¹⁵⁷² Nigeria is conflicted by the revenues generated by oil production as well as what to do with the impacts of climate change on the Niger Delta, for not

¹⁵⁶⁵ This area is highly prone to sea level rises which can cause catastrophic consequences such as the submersion of oil rigs which generate much of the country's GDP - Ajayi 2017 *JICL* 98.

¹⁵⁶⁶ Own insertion. Acid rain which occurs more frequently as a result of Sulphur emissions from power plants and oil companies is common in the Niger Delta exacerbated by gas flaring. See Elum and Momodu 2017 *Renew Sustain Energy Rev* 72-80.

¹⁵⁶⁷ Adejonwo-Osho "Nigeria's commitments under climate change Paris Agreement" 61. This is also stated by Watson, Zinyowera and Moss (eds) "The Regional Impacts of Climate Change" 8 that "the African continent is particularly vulnerable to the impacts of climate change because of factors such as widespread poverty, recurrent droughts, inequitable land distribution, and overdependence on rain-fed agriculture". Also see Bessah and Addo 2013 *IJDS* 1056-1066.

¹⁵⁶⁸ Bessah and Addo 2013 *IJDS* 1056-1066; Watson, Zinyowera and Moss (eds) "The Regional Impacts of Climate Change".

¹⁵⁶⁹ *Social and Economic Rights Action Centre (SERAC) v Nigeria* (2001) AHRLR 60 (ACHPR 2001).

¹⁵⁷⁰ Sakpere 2013 *African Journal of Rhetoric* 64-90; Adebayo and Arowolo 2012 *UBJPPL* 83-104.

¹⁵⁷¹ Adejonwo-Osho "Nigeria's commitments under climate change Paris Agreement" 61.

¹⁵⁷² National Planning Commission 2009 http://www.africanchildforum.org/clr/policy%20per%20country/2018%20Update/Nigeria/nigeria-vision20-2020_en.pdf 5.

only do they have economic consequences, but also political ramifications.¹⁵⁷³ According to Oulu, Nigeria has to introduce new legislation and policies in this regard.¹⁵⁷⁴

Climate change impacts in Nigeria could result in a loss of GDP of 6% and 30% by 2050.¹⁵⁷⁵ This is estimated to be the equivalent of US\$ 100 to US\$ 400 billion dollars.¹⁵⁷⁶ Nigeria views climate change not only as an economic issue but one that affects its development.¹⁵⁷⁷ Ecosystems such as the Sahel Savannah are likely to increase and reinforce the recently seen patterns of water scarcity which resulted in almost a ninety per cent shrinking of Lake Chad.¹⁵⁷⁸ Lake Chad was once the largest water reservoir in the Sahel region, covering an estimated area of 26 000 km² and by the year 2000 it has shrunk to one-fifth of that area.¹⁵⁷⁹ Recent floods, droughts and desertification have caused significant damage to the environment and impacted on agricultural activity. Rural incomes reduced, soil erosion increased, and the generation of hydro-electricity used for irrigation and powering small villages were affected.¹⁵⁸⁰ Although Nigeria has abundant fossil fuel resources, arguments have been made about how Western economies benefitted from the use of its fossil fuels to build their economies rather than that of Africa or the developing world. The general consensus of developing countries is, accordingly, that they too should be allowed to use fossil fuels for their own development and that they should not be limited as they did not contribute to climate change in the same manner as the developed world did.¹⁵⁸¹ This type of argument does not seem to take into account

¹⁵⁷³ Adejonwo-Osho "Nigeria's commitments under climate change Paris Agreement" 61.

¹⁵⁷⁴ Adejonwo-Osho "Nigeria's commitments under climate change Paris Agreement" 61.

¹⁵⁷⁵ UNFCCC 2010 <https://unfccc.int/files/adaptation/application/pdf/nigerianeeds.pdf>.

¹⁵⁷⁶ UNFCCC 2010 <https://unfccc.int/files/adaptation/application/pdf/nigerianeeds.pdf>.

¹⁵⁷⁷ UNFCCC 2010 <https://unfccc.int/files/adaptation/application/pdf/nigerianeeds.pdf>.

¹⁵⁷⁸ Adebayo and Arowolo 2012 *UBJPPL* 83-104. This desertification has created increasing conflicts between farmers and herdsman and in recent times climate refugees have been increasing in the Sahel region.

¹⁵⁷⁹ Adejonwo-Osho "Nigeria's commitments under climate change Paris Agreement" 61.

¹⁵⁸⁰ Adebayo and Arowolo 2012 *UBJPPL* 83-104.

¹⁵⁸¹ Elum and Momodu 2017 *Renew Sustain Energy Rev* 72-80: "developing countries especially poor African countries cannot be exempted from the global drive to mitigate climate change as there is general-consensus that climate change mitigation requires global efforts to be effective. Nigeria

the disastrous consequences that climate change has on the developing world, and that more CO₂ emissions would worsen their livelihoods. Nigeria already has an unstable power-supply, deforestation which leads to more carbon emissions into the atmosphere and as stated above, gas flaring that contributes to large scale GHG emissions, altering the rainfall pattern and vegetation in the region.¹⁵⁸²

Nigeria is, similar to South Africa,¹⁵⁸³ a signatory to both the *Kyoto Protocol*¹⁵⁸⁴ and the *Paris Agreement*.¹⁵⁸⁵ Nigeria has to comply with Article 4(f) of the UNFCCC.¹⁵⁸⁶ Nigeria initially did not seem committed to take measures in this regard.¹⁵⁸⁷ The National Adaptation Strategy and Plan of Action on Climate Change for Nigeria (NASPA-CCN) was launched in November 2011.¹⁵⁸⁸ Its aim was to ensure that climate change adaptation is integrated into sustainable development strategies of the future¹⁵⁸⁹ as well as to ensure that adaptation measures are to be developed on a

is, as most other developing countries, greatly vulnerable to climate change impacts given its reliance on fossil fuels and therefore, requires a plan to not only develop sustainability and limit GHG emissions, but also effectively transit to a green economy. Nigeria is one such country which has committed to renewable energy development to ensure sustainable development".

¹⁵⁸² Sakpere 2013 *African Journal of Rhetoric* 64-90.

¹⁵⁸³ UNCC 2020 <https://unfccc.int/node/61130>. Nigeria ratified the *Kyoto Protocol* on 10 December 2004 and signed the *Paris Agreement* on 22 September 2016, ratified it on 16 May 2017.

¹⁵⁸⁴ Ratified on 10 December 2004. See Article 25 on the *Kyoto Protocol*. See para 3.2.3.

¹⁵⁸⁵ Ratified on 16 May 2017 - UNFCCC Nigeria <https://unfccc.int/node/61130>. See Article 20 on the *Paris Agreement*. See para 3.2.4.

¹⁵⁸⁶ UNFCCC Article 4(f): at an international level are as a result of the UNFCCC Article 4(f) which states that "All Contracting Parties have responsibilities to take climate change into account..., to minimize adverse effects on the economy, public health, and quality of environment, in projects or measures undertaken to mitigate or adapt to climate change". See para 3.2.2.

¹⁵⁸⁷ Adebayo and Arowolo 2012 *UBJPPL* 83-104.

¹⁵⁸⁸ Adejonwo-Osho "Nigeria's commitments under climate change Paris Agreement" 64.

¹⁵⁸⁹ Adejonwo-Osho "Nigeria's commitments under climate change Paris Agreement" 64.

federal, state and local government level.¹⁵⁹⁰ The plan included strategies for thirteen priority sectors including energy:¹⁵⁹¹

- a) Increased protective margins in construction and placement of energy infrastructure (i.e., higher standards and specifications);
- b) The undertaking of risk assessments and risk reduction measures to increase resilience of the energy sector;
- c) Strengthen existing energy infrastructure, in part through early efforts to identify and implement all possible "no regrets" actions;
- d) Develop and diversify secure energy backup systems to ensure both civil society and security forces have access to energy supply; and
- e) Expand sustainable energy sources and decentralise transmission in-order to reduce vulnerability of energy infrastructure to climate impacts.¹⁵⁹²

However, the plan did not find official support, perhaps cautious of limiting the "golden goose" in the form of oil revenue. The Executive opted for the adoption of a National Climate Change Policy and Response Strategy (NCCPRS) which aimed at responding to climate change induced challenges rather than to address the energy challenges.¹⁵⁹³ The vision of the NCCPRS is one in which a climate change-resilient

¹⁵⁹⁰ *National Adaptation Strategy and Plan of Action on Climate Change for Nigeria* (NASPA-CCN), November 2011 v: "To reduce the impacts of climate change through adaptation measures that can be undertaken by the Federal, State and Local Governments, civil society, private sector, communities and individuals, including measures that will:

1. improve awareness and preparedness for climate change impacts
2. mobilise communities for climate change adaptation actions
3. reduce the impacts of climate change on key sectors and vulnerable communities integrate climate change adaptation into national, sectoral, State and Local Government planning and into the plans of universities, research and educational organisations, civil society organisations, the private sector and the media."

¹⁵⁹¹ The other sectors include agriculture, freshwater resources, coastal water resources and fisheries, forests, biodiversity, health and sanitation, human settlements and housing, energy, transportation and communications, industry and commerce, disaster, migration and security, livelihoods, vulnerable groups, and education – see in this regard Adejonwo-Osho "Nigeria's commitments under climate change Paris Agreement" 64.

¹⁵⁹² *National Adaptation Strategy and Plan of Action on Climate Change for Nigeria* (NASPA- CCN), November 2011 vii.

¹⁵⁹³ Nachmany *et al* 2015 https://www.lse.ac.uk/GranthamInstitute/wp-content/uploads/2015/05/Global_climate_legislation_study_20151.pdf.

Nigeria is ready for rapid and sustainable socio-economic development.¹⁵⁹⁴ The mission of the NCCPRS is to strengthen national initiatives to mitigate and adequately adapt to climate change and involve all sectors of society, including the poor and other vulnerable groups (women, youth etc.) within the overall context of advancing sustainable socio-economic development.¹⁵⁹⁵

After the *Paris Agreement*, Nigeria commenced the introduction of climate change legislation building on its existing environmental laws and NDCs devised in accordance with the *Paris Agreement*.

The Federal Environmental Agency (FEPA) established by Decree 59 of 1992¹⁵⁹⁶ was the first attempt by the Nigerian government to tackle the issue of climate change.¹⁵⁹⁷ Two competing Bills were introduced in 2008 with the aim of improving the ability to set, coordinate, and implement climate change policies in Nigeria. The difference in emphasis between the Bills was that the first Bill proposed the establishment of an agency linked to the Ministry of the Environment whilst the second Bill (referred to above) aimed at creating an independent National Commission on Climate Change.¹⁵⁹⁸ The *Climate Change Commission Bill* (hereafter the Bill), drafted in 2010, became trapped in the legislative process and in its current form has been re-introduced into parliament. It has been passed by the lower chamber and is currently

¹⁵⁹⁴ Nachmany *et al* 2015 https://www.lse.ac.uk/GranthamInstitute/wp-content/uploads/2015/05/Global_climate_legislation_study_20151.pdf.

¹⁵⁹⁵ The main strategic objectives of the NCCPRS in achieving low-carbon, high economic growth and a climate resilient society are:

- Implement mitigation measures that will promote low carbon as well as sustainable and high economic growth
- Strengthen national capacity to adapt to climate change;
- Raise climate change-related science, technology and Research and Development to a new level that will enable the country to better participate in international scientific and technological co-operation on climate change;
- Significantly increase public awareness and involve the private sector in addressing the challenge of climate change;
- Strengthen national institutions and mechanisms (policy, legislative and economic) to establish a suitable and functional framework for climate change Governance.

See in this regard Nachmany *et al* 2015 https://www.lse.ac.uk/GranthamInstitute/wp-content/uploads/2015/05/Global_climate_legislation_study_20151.pdf.

¹⁵⁹⁶ *Federal Environment Protection Agency (Amendment) Decree* No 59 of 1992 (now repealed).

¹⁵⁹⁷ Ati, Agubamah and Abaje 2018 *FUJOPIA* 116.

¹⁵⁹⁸ See in this regard Nachmany *et al* 2015 https://www.lse.ac.uk/GranthamInstitute/wp-content/uploads/2015/05/Global_climate_legislation_study_20151.pdf.

in its second reading at the upper chamber represented by the Senate.¹⁵⁹⁹ The Bill is envisaged as mainstreaming and addressing the salient issues that are connected with climate change and providing an institutional and legal framework for climate change governance.¹⁶⁰⁰ This mainstreaming is to be done through a planning phase by all federal government departments and agencies in which due consideration of climate change issues are to be factored in. The eventual Act is expected to facilitate coordination and support for the multi-level and cross-sector climate change responses between the different federal government departments and their legal frameworks.¹⁶⁰¹ Mainstreaming is critical in a world of political uncertainty, as mainstreaming protects against political inaction, capacity or a change in policy.¹⁶⁰² It is also able to overcome some of the challenges in cross-sectoral and intra-governmental conflicts when tackling climate change.¹⁶⁰³

Clause 2 of the Bill indicates that the President will be the chairman of the commission.¹⁶⁰⁴ The commission is to be headquartered in Abuja with a Zonal office in the six geopolitical areas of the country. The commission members will include the Ministers in various portfolios, including the ministers responsible for energy (power and steel, gas and petroleum), science and technology, environment, housing and urban development, and water resources, agriculture and rural development, amongst others.

Clause 7 of the Bill states that the commission is responsible for the strategic planning and co-ordination of national policies in the field of climate change and energy in all its ramifications and must advise the federal government on policies and priorities in the international climate change regime and its effect on the country. The commission is charged with reducing the impacts of climate change and maintaining programmes of technical assistance to various bodies both in the public and private sectors. These

¹⁵⁹⁹ Nachmany *et al* 2015 https://www.lse.ac.uk/GranthamInstitute/wp-content/uploads/2015/05/Global_climate_legislation_study_20151.pdf 2.

¹⁶⁰⁰ Yusuf 2011 https://yusufali.net/articles/LEGAL_PROFESSION_AND_CLIMATE_CHANGE_IN_NIGERIA.pdf.

¹⁶⁰¹ Ajayi 2017 *JICL* 100.

¹⁶⁰² Rumble "Climate change legislative development on the African continent" 55.

¹⁶⁰³ Rumble "Climate change legislative development on the African continent" 55.

¹⁶⁰⁴ Ajayi 2017 *JICL* 104.

programmes will deal with the implementation of climate change criteria, guidelines, regulations and standards monitoring and the compliance with such regulations and standards as devised by the commission. Other programmes include those that shall prevent and eliminate GHGs in the nation's air, land and inter-state waters and programmes for the restoration and enhancement of the environment. The Bill undertakes to implement and ensure national compliance with all commitments under the UNFCCC, *Kyoto Protocol*, Marrakesh Accords and all other related international agreements on climate change.¹⁶⁰⁵ As this Bill includes bold decisions for an oil state, it might be the reason for the Bill's slow progression. The Bill makes recommendations for the establishment of a fund to sponsor the activities of the commission and related events. Clause 9(c) of the Bill provides that funds would be disbursed according to an approved formula, this formula is yet to be stated.

The commission is also tasked with making recommendations on the exploitation of renewable energy.¹⁶⁰⁶ The Bill does make provision for intergovernmental cooperation to strengthen reform and policy as evidenced by Ministers in various portfolios.¹⁶⁰⁷ The delays in implementation of Nigeria's climate change commitments threatens its economic development. Without a legal framework all climate related endeavours are a mirage in the opinion of the author, vulnerable to manipulation by "big oil" and climate change responses remain embedded in policies.¹⁶⁰⁸ The eventual Act will be imbedded in the environmental legislation of the country.

In 2007 the *National Environmental Standards and Regulations Enforcement Agency (Establishment) Act*¹⁶⁰⁹ (NASREA) was enacted and in turn established a National Environmental Standards and Regulations Enforcement Agency as a regulator which was charged with the responsibility of protecting the environment and its

¹⁶⁰⁵ Clause 7(i).

¹⁶⁰⁶ Clause 7(k).

¹⁶⁰⁷ Clause 3(2).

¹⁶⁰⁸ Ajayi 2017 *JICL* 107.

¹⁶⁰⁹ *National Environmental Standards and Regulations Enforcement Agency (Establishment) Act* 25 of 2007.

development in Nigeria.¹⁶¹⁰ NASREA enforces compliance of all environmental laws, guidelines, policies, standards and regulations in Nigeria as well as enforces all international agreements, protocols, conventions and treaties on the environment which Nigeria is a signatory to.¹⁶¹¹ NESREA drafted regulations and standards in relation to climate change related issues such as the ozone layer, effluent limitations, control of fires and vehicle emissions.¹⁶¹² It is anticipated that a holistic approach will be adopted in the oversight role that NASREA has in supervising, monitoring and coordinating the implementation of the standards and regulations.¹⁶¹³ How this legislation will fit into the ambit of the Bill, is not clear. It further brings to question that without a framework law, it may be nearly impossible to comprehensively and coherently administer all these standards and regulations.¹⁶¹⁴

The National Policy on the Environment 1991, which was revised in 1999 and 2016, provides a more holistic approach to the management of the environment and natural resources by adequately ensuring for their protection and sustainable development.¹⁶¹⁵ Environmental principles are at the core of the policy providing guidance on sectoral and cross sectoral strategic actions, some of these principles are the public trust doctrine, the polluter pays principle, the precautionary principle, intra and inter-generational equity and an environmental right which are in accordance with international standards and guidelines.¹⁶¹⁶ Recognition of climate change is made by the policy as an emerging challenge that requires mitigation and adaptation strategies to circumvent catastrophic climate change impacts as

¹⁶¹⁰ *National Environment Standards and Regulations Enforcement Agency (Establishment) Act 2007*. Ss 1(1) and 2. Adejonwo-Osho "Nigeria's commitments under climate change Paris Agreement" 68.

¹⁶¹¹ Adejonwo-Osho "Nigeria's commitments under climate change Paris Agreement" 71.

¹⁶¹² For example, the National Environmental (Ozone Layer Protection) Regulations, 2009; National Effluent Limitation Regulations, Special Instrument No 8 1991; National Environmental (Control of Bush, Forest Fire and Open Burning) Regulations, 2011; and National Environmental (Control of Vehicular Emissions from Petrol and Diesel Engines) Regulations, 2011. Adejonwo-Osho "Nigeria's commitments under climate change Paris Agreement" 71.

¹⁶¹³ Adejonwo-Osho "Nigeria's commitments under climate change Paris Agreement" 71.

¹⁶¹⁴ Adejonwo-Osho "Nigeria's commitments under climate change Paris Agreement" 71.

¹⁶¹⁵ Adejonwo-Osho "Nigeria's commitments under climate change Paris Agreement" 71.

¹⁶¹⁶ Adejonwo-Osho "Nigeria's commitments under climate change Paris Agreement" 72.

evidenced by the shrinking of Lake Chad, a lake that provided water to a large part of the ecosystem in the region.¹⁶¹⁷

The legislation discussed above did not provide for financial measures. However, green bonds were introduced as will be discussed in the following paragraph.

5.2.2 Existing green bond framework

Nigeria developed and published a Green Bond Framework on 28 May 2017.¹⁶¹⁸ This Green Bond Framework is in accordance with the intention of the Ministry of Environment to meet its "obligations under the United Nations Framework Convention on Climate Change, by implementing programmes and projects that provide an enabling environment for the achievement of the emissions targets that have been outlined in the Paris Agreement".¹⁶¹⁹ The inclusion of the Ministry of Finance in the Green Bond Framework is as a result of its responsibilities to public finance through the Debt Management Office (DMO) and the administration and monitoring of state resources through the Accountant General of the Federation (OAGF).¹⁶²⁰

The collaboration between the two ministries is to enhance the growth of the Green Bond Framework.¹⁶²¹ This collaboration led to Nigeria becoming the first African country "to issue a Climate Bonds Certified Sovereign Green Bond and only the fourth nation in the world to issue after Poland, France and Fiji".¹⁶²² The issuance of the five-year NGN10.69 billion served as "a pilot sovereign" of a much larger NGN150

¹⁶¹⁷ Adejonwo-Osho "Nigeria's commitments under climate change Paris Agreement" 72.

¹⁶¹⁸ UNFCCC 2017 <https://www.climatebonds.net/files/files/UNEP%20Nigeria%20Green%20Bond%20Framework.pdf>.

¹⁶¹⁹ UNFCCC 2017 <https://www.climatebonds.net/files/files/UNEP%20Nigeria%20Green%20Bond%20Framework.pdf>.

¹⁶²⁰ UNFCCC 2017 <https://www.climatebonds.net/files/files/UNEP%20Nigeria%20Green%20Bond%20Framework.pdf>.

¹⁶²¹ UNFCCC 2017 <https://www.climatebonds.net/files/files/UNEP%20Nigeria%20Green%20Bond%20Framework.pdf>.

¹⁶²² CBI Media Release 2017 https://www.climatebonds.net/files/releases/media_release_nigeria_is_sues_certified_sovereign_green_bond_19122017.pdf.

Billion green bond programme which had to fund other renewable energy, afforestation and environmental projects.¹⁶²³

The purpose of the Green Bond Framework is to demonstrate how the Federal Ministry of Environment will periodically screen the sector strategies developed by the various Ministries' departments and agencies for programmes and projects with green credentials to be funded by the Federal Budget.¹⁶²⁴ The programmes are critical as they form the basis upon which the issuance of green bonds is allocated in funding new projects or refinancing projects that are identified as having green credentials in alignment with the Green Bond Guidelines.¹⁶²⁵ These Guidelines are an adaptation of the GBP, 2016 which form the global standard.¹⁶²⁶

The green bond raised, forms part of the annual borrowing plan as long as there are programmes and projects within individual Ministries Departments and Agencies (MDAs) sector strategies that meet the criteria specified in the Green Bond guidelines issued by the Federal Ministry of Environment.¹⁶²⁷ The Ministry of Finance adopted the:

- (A) Use of Proceeds criteria and
- (B) Policies and Internal Control Procedures in respect of
 - (i) project evaluation and selection;
 - (ii) management of proceeds; and
 - (iii) reporting as set out in the Framework.¹⁶²⁸

¹⁶²³ CBI 2017 https://www.climatebonds.net/files/releases/media_release_nigeria_issues_certified_sovereign_green_bond_19122017.pdf.

¹⁶²⁴ UNFCCC 2017 <https://www.climatebonds.net/files/files/UNEP%20Nigeria%20Green%20Bond%20Framework.pdf> 3.

¹⁶²⁵ UNFCCC 2017 <https://www.climatebonds.net/files/files/UNEP%20Nigeria%20Green%20Bond%20Framework.pdf> 4.

¹⁶²⁶ See para 3.6.3. Also see the UNFCCC 2017 <https://www.climatebonds.net/files/files/UNEP%20Nigeria%20Green%20Bond%20Framework.pdf> under the heading "Purpose" 3.

¹⁶²⁷ UNFCCC 2017 <https://www.climatebonds.net/files/files/UNEP%20Nigeria%20Green%20Bond%20Framework.pdf>. Certain assertions are made by the Federal Ministry of Environment: that it be represented by the Debt Management Office (DMO) and the Office of the Accountant General of the Federation (OAGF) 3.

¹⁶²⁸ UNFCCC 2017 <https://www.climatebonds.net/files/files/UNEP%20Nigeria%20Green%20Bond%20Framework.pdf> 3.

The Green Bond Framework, developed by the Federal Ministry of Environment of the Federal Republic of Nigeria with the support of the Ministry of Finance through the DMO and OAGF,¹⁶²⁹ refers to the financing and or re-financing of eligible projects referred to in Federal Sector Strategies¹⁶³⁰ via a Federal Government of Nigeria issued Green Bond.¹⁶³¹ Additional to the eligibility criteria in the framework, the relevant ministries have committed to disclose the relevant eligible sector measures, (and specific projects if possible), utilised for the respective green bond to be issued at the time of (or before) issuance, where project review and evaluation has been completed and the allocation of proceeds has been determined in advance of issuance.¹⁶³² Eligible projects are separated and identified in terms of mitigation and adaptation projects.¹⁶³³

The Use of Proceeds criteria is similar to that of the GBP in that each green bond is exclusively used for spending in the form of budget allocation/subsidies/projects for new financing or the re-financing of existing "Eligible Projects".¹⁶³⁴ "Eligible Projects" refer to funding from the Federal Republic of Nigeria that in whole or in part, promote the transition to a low-emission and climate resilient growth, including both mitigation and adaptation, for example, as set out in Tables 5.1 and 5.2.¹⁶³⁵

¹⁶²⁹ See above.

¹⁶³⁰ UNFCCC 2017 <https://www.climatebonds.net/files/files/UNEP%20Nigeria%20Green%20Bond%20Framework.pdf> 4. S 1 of the Green Bond Framework 2017 provides the Eligible Projects. The projects are categorized around specific themes under mitigation and adaptation. For Mitigation these are Energy Efficiency; Resource Efficiency; Renewable Energy and Clean Technology. For Adaptation only one category is available which is Sustainable Forest Management.

¹⁶³¹ UNFCCC 2017 <https://www.climatebonds.net/files/files/UNEP%20Nigeria%20Green%20Bond%20Framework.pdf> 3.

¹⁶³² UNFCCC 2017 <https://www.climatebonds.net/files/files/UNEP%20Nigeria%20Green%20Bond%20Framework.pdf> 4.

¹⁶³³ UNFCCC 2017 <https://www.climatebonds.net/files/files/UNEP%20Nigeria%20Green%20Bond%20Framework.pdf> 4.

¹⁶³⁴ UNFCCC 2017 <https://www.climatebonds.net/files/files/UNEP%20Nigeria%20Green%20Bond%20Framework.pdf> 4.

¹⁶³⁵ UNFCCC 2017 <https://www.climatebonds.net/files/files/UNEP%20Nigeria%20Green%20Bond%20Framework.pdf> 4.

Table 5.1: Eligible projects in relation to mitigation

Theme	Equivalent NDC Target	Project Type
Energy Efficiency	2% per year energy efficiency (30% by 2030) Efficient gas generators	Investment in equipment, systems and services which result in more efficient use of energy
Resource Efficiency	Work towards ending gas flaring by 2030 Improve electricity grid	Investments to improve processes that enhance energy conversion
Renewable Energy	Work towards Off-grid solar PV of 13 GW (13, 000MW)	Investments in equipment systems and services which enable renewable energy
Clean Technology	Transport shift-car to bus	Investments in manufacturing of components that support renewables

Table 5.2: Eligible projects in relation to adaptation

Theme	NDC Target	Project Type
Sustainable Forest Management	Climate smart agriculture and reforestation	Investments in initiatives that benefit sustainable agriculture, fishery aquaculture, forestry, and climate smart farm inputs such as biological crop protection or drip-irrigation

Project Evaluation and Selection is done through the Federal Ministry of Environment and the Inter-Ministerial Committee on Climate Change (ICCC) which reviews sector strategies for MDAs represented on the ICCC for programmes and projects which meet the Green Bond Guidelines.¹⁶³⁶ The process is very bureaucratic, but probably transparent in that the projects are communicated to the Federal Ministry of Finance through the Debt Management Office (DMO) for inclusion in the projects that will be

¹⁶³⁶ UNFCCC 2017 <https://www.climatebonds.net/files/files/UNEP%20Nigeria%20Green%20Bond%20Framework.pdf> 5.

funded by a green bond.¹⁶³⁷ These projects may be additional to the listed project criteria but must be aligned with the eligible sectors outlined in the above tables.

A technical aspect of the funding criteria is that the Federal Ministry of Finance will approve resources that are equivalent to the allocations to the eligible projects to be included in the borrowing plan.¹⁶³⁸ Resources are matched to the identified projects as long as the identified projects are the annual budgets of the supervising MDAs and the budget when submitted by the President of the Federal Republic of Nigeria is approved by the National Assembly.¹⁶³⁹

The following additional considerations are used for project selection:

- Investment horizon;
- Alignment with the disclosed development plan at the time;
- Provision of evidence of impact on the economy (e.g. Economic Rate of Return, Jobs created etc.);
- Calculation of associated emissions reduction in GHG;
- Availability of information to facilitate reporting; and
- Other ESG/external factors related to the agencies/organisations.¹⁶⁴⁰

Projects that are deemed to be eligible, qualify for green bond allocation.¹⁶⁴¹ Double counting of eligible green projects is avoided by the issuance of green bonds that are supported by/allocated to Eligible Projects on an annual budget reconciliation process.¹⁶⁴² The arduous process involves several ministries each with their own contributions to the process, the Ministry of Finance represented by the DMO and the

¹⁶³⁷ UNFCCC 2017 <https://www.climatebonds.net/files/files/UNEP%20Nigeria%20Green%20Bond%20Framework.pdf> 5.

¹⁶³⁸ UNFCCC 2017 <https://www.climatebonds.net/files/files/UNEP%20Nigeria%20Green%20Bond%20Framework.pdf> 5.

¹⁶³⁹ UNFCCC 2017 <https://www.climatebonds.net/files/files/UNEP%20Nigeria%20Green%20Bond%20Framework.pdf> 5.

¹⁶⁴⁰ UNFCCC 2017 <https://www.climatebonds.net/files/files/UNEP%20Nigeria%20Green%20Bond%20Framework.pdf> 5.

¹⁶⁴¹ UNFCCC 2017 <https://www.climatebonds.net/files/files/UNEP%20Nigeria%20Green%20Bond%20Framework.pdf> 5.

¹⁶⁴² UNFCCC 2017 <https://www.climatebonds.net/files/files/UNEP%20Nigeria%20Green%20Bond%20Framework.pdf> 5.

in this particular instance the Federal Ministry of Budget and National Planning are involved in this allocation procedure.¹⁶⁴³ In the issuance of each green bond the Federal Ministry of Finance represented by the DMO, having assured DNV GL¹⁶⁴⁴ that the green bond allocation will not allow for listing of the same budget allocation/subsidies/project twice, so reconciliation to the annual budget will prevent any such double counting in green bond allocation and therefore prevent funding of the same allocation. Annual reporting procedures will confirm this.¹⁶⁴⁵ DNV GL is an independent expert group that specialises in risk management and quality assurance.¹⁶⁴⁶

Proceeds from the issuance of the bond are credited to the Green Bonds Proceeds Account at the Central Bank of Nigeria (CBN).¹⁶⁴⁷ Upon confirmation of the approved amounts for the projects from the Budget office, the DMO advises the Office of the Accountant General of the Federation (OAGF) to open sub-accounts for each project and transfer the amounts approved to the respective sub-accounts.¹⁶⁴⁸

The mechanism used for financing the various projects is documented below in Table 5.3 for each Eligible Sector considered for funding:¹⁶⁴⁹

¹⁶⁴³ UNFCCC 2017 <https://www.climatebonds.net/files/files/UNEP%20Nigeria%20Green%20Bond%20Framework.pdf> 5.

¹⁶⁴⁴ UNFCCC 2017 <https://www.climatebonds.net/files/files/UNEP%20Nigeria%20Green%20Bond%20Framework.pdf> 6. DNV GL 2020 <https://www.dnvgl.com/about/index.html> 5. A globally leading quality assurance and risk management company. Helps companies become safer and greener.

¹⁶⁴⁵ UNFCCC 2017 <https://www.climatebonds.net/files/files/UNEP%20Nigeria%20Green%20Bond%20Framework.pdf> 5.

¹⁶⁴⁶ DNV GL 2020 <https://www.dnvgl.com/about/index.html>.

¹⁶⁴⁷ UNFCCC 2017 <https://www.climatebonds.net/files/files/UNEP%20Nigeria%20Green%20Bond%20Framework.pdf> 5.

¹⁶⁴⁸ UNFCCC 2017 <https://www.climatebonds.net/files/files/UNEP%20Nigeria%20Green%20Bond%20Framework.pdf> 6.

¹⁶⁴⁹ UNFCCC 2017 <https://www.climatebonds.net/files/files/UNEP%20Nigeria%20Green%20Bond%20Framework.pdf> 6.

Table 5.3: Project evaluation and selection

Eligible Theme	Funding Mechanism	Government Agency(ies) involved in funding of the Eligible Theme
Renewable Energy	Budget allocation-including taxes and project savings from implementation	Ministry of Finance, Ministry of Power Works and Housing, Niger Delta Power Holding Company (NPHDC)
Afforestation	Budget Allocation- including subsidies, taxes and savings from community takeover of programs	Ministry of Finance - Ministry of Environment
Transportation	Budget Allocation – including taxes and project savings from improved operational activity of the service	Ministry of Finance – Ministry of the Federal Capital Territory (FCT)

Proceeds from issued green bonds are credited into a sub-account, whereupon it is moved to a sub-portfolio or otherwise tracked by the issuer in an appropriate manner and attested to by a formal internal process linked to the issuer's lending and investment operations for Green Projects.¹⁶⁵⁰ For as long as the green bonds are outstanding, the balance of the tracked proceeds are periodically adjusted to match allocations to eligible Green Projects made during that period.¹⁶⁵¹ The issuer has to inform the investors of the intended types of temporary placement for the balance of unallocated proceeds.¹⁶⁵²

Custody of the Green Bonds Proceeds Account is held by the DMO, which authorises payment from this account.¹⁶⁵³ Upon Budget approval, the specific amounts approved for the environmental projects to be financed are confirmed by the FMEnv from the

¹⁶⁵⁰ UNFCCC 2017 <https://www.climatebonds.net/files/files/UNEP%20Nigeria%20Green%20Bond%20Framework.pdf> 6.

¹⁶⁵¹ UNFCCC 2017 <https://www.climatebonds.net/files/files/UNEP%20Nigeria%20Green%20Bond%20Framework.pdf> 6.

¹⁶⁵² UNFCCC 2017 <https://www.climatebonds.net/files/files/UNEP%20Nigeria%20Green%20Bond%20Framework.pdf> 6.

¹⁶⁵³ UNFCCC 2017 <https://www.climatebonds.net/files/files/UNEP%20Nigeria%20Green%20Bond%20Framework.pdf> 6.

Budget Office and advised to the DMO and the OAGF.¹⁶⁵⁴ Details of the implementing MDA are included with the project code.¹⁶⁵⁵

Through the REMITA Platform,¹⁶⁵⁶ sub-accounts under the Treasury Single Account would be opened for each project to be financed with the proceeds of the Green Bond.¹⁶⁵⁷ The project sub-accounts are linked to the Green Bond Proceeds Account from where they are funded.¹⁶⁵⁸

The unallocated balance of issuance proceeds eligible for Green Projects is held in accordance with the Ministry of Finance, represented by the Office of the Accountant General of the Federations normal liquidity management policy - which comprises investments in cash, short term deposits and other short-term liquidity instruments.¹⁶⁵⁹ The responsible Ministry Department Agencies have authority to stop the further utilisation of funds in the instance of misapplication of the funds. At financial year end, any unutilised funds are rolled over to the following year, as long as the project is still on-going.¹⁶⁶⁰ The principal amount and interest payable on the Notes are made from general funds and not directly linked to the performance of the eligible Green Projects.¹⁶⁶¹

Quarterly implementation reports are made by the implementing MDAs to the Climate Change Department of the FMEnv.¹⁶⁶² The mandate of the Climate Change Department is to align the projects being implemented with the objectives of Nigeria's

¹⁶⁵⁴ UNFCCC 2017 <https://www.climatebonds.net/files/files/UNEP%20Nigeria%20Green%20Bond%20Framework.pdf> 6.

¹⁶⁵⁵ UNFCCC 2017 <https://www.climatebonds.net/files/files/UNEP%20Nigeria%20Green%20Bond%20Framework.pdf> 6.

¹⁶⁵⁶ REMITA is a mobile pay platform based in Lagos Nigeria <https://www.remita.net>.

¹⁶⁵⁷ UNFCCC 2017 <https://www.climatebonds.net/files/files/UNEP%20Nigeria%20Green%20Bond%20Framework.pdf> 6.

¹⁶⁵⁸ UNFCCC 2017 <https://www.climatebonds.net/files/files/UNEP%20Nigeria%20Green%20Bond%20Framework.pdf> 6.

¹⁶⁵⁹ UNFCCC 2017 <https://www.climatebonds.net/files/files/UNEP%20Nigeria%20Green%20Bond%20Framework.pdf> 7.

¹⁶⁶⁰ UNFCCC 2017 <https://www.climatebonds.net/files/files/UNEP%20Nigeria%20Green%20Bond%20Framework.pdf> 7.

¹⁶⁶¹ UNFCCC 2017 <https://www.climatebonds.net/files/files/UNEP%20Nigeria%20Green%20Bond%20Framework.pdf> 7.

¹⁶⁶² UNFCCC 2017 <https://www.climatebonds.net/files/files/UNEP%20Nigeria%20Green%20Bond%20Framework.pdf> 7.

NDCs.¹⁶⁶³ Summaries of reports by the various MDAs are collated and submitted to the DMO and the OAGF.¹⁶⁶⁴ The Federal Ministry of Environment in conjunction with the Ministry of Finance of the Republic of Nigeria, represented by the DMO and the OAGF, have to report bi-annually to investors, initially within one year of the issuance and until full allocation, on amounts equal to the net proceeds of the Green Bond issued. The reporting is in relation to the:

- Aggregate amount allotted to the various Eligible Sectors;
- Remaining balance of funds which have not yet been utilised; and
- Examples of Green Projects from each Eligible Sector(s) (subject to confidentiality disclosures).¹⁶⁶⁵

Conformity to the Use of Proceeds of the Green Bond issuance and to the Green Bond Framework is verified by the Federal Ministry of Environment represented by the Climate Change Department, the Ministry of Finance represented by the DMO and the OAGF.¹⁶⁶⁶ Reporting is also done on the environmental and social impacts resulting from each Green Project allocated from the respective Green Bond.

Some of the relevant metrics used are included in Table 5.4.¹⁶⁶⁷

¹⁶⁶³ UNFCCC 2017 <https://www.climatebonds.net/files/files/UNEP%20Nigeria%20Green%20Bond%20Framework.pdf> 7.

¹⁶⁶⁴ UNFCCC 2017 <https://www.climatebonds.net/files/files/UNEP%20Nigeria%20Green%20Bond%20Framework.pdf> 7.

¹⁶⁶⁵ UNFCCC 2017 <https://www.climatebonds.net/files/files/UNEP%20Nigeria%20Green%20Bond%20Framework.pdf> 7.

¹⁶⁶⁶ UNFCCC 2017 <https://www.climatebonds.net/files/files/UNEP%20Nigeria%20Green%20Bond%20Framework.pdf> 8.

¹⁶⁶⁷ UNFCCC 2017 <https://www.climatebonds.net/files/files/UNEP%20Nigeria%20Green%20Bond%20Framework.pdf> 8.

Table 5.4: Ministry of Finance Eligible Sector Criterion for Green Bond(s)

Eligible Theme	Economic Reporting Metric	Environmental Reporting Metrics
Renewable energy	Jobs created Taxes Generated Savings incurred Locations of facilities	Total megawatt/gigawatt capacity of energy produced (MW/GW) Total GHG emissions avoided through the project (tCO ₂ eq)
Afforestation	Jobs created Taxes Generated Savings incurred Locations of facilities	Areas of forest (square meters/acres/hectares) planted/preserved Total GHG emissions avoided through the projects (tCO ₂ eq)
Clean Transportation	Jobs created Taxes Generated Savings incurred Locations of facilities	Location and number of buses deployed Number of passengers transferred from cars to buses Total GHG emissions avoided through the project (tCO ₂ eq)

The Ministry of Environment must on an annual basis provide updated reports on its website for the public.¹⁶⁶⁸ Second Party opinion must be provided per the requirements of the approved list of the Climate Bonds Initiative.¹⁶⁶⁹ The objective of the second party opinion is to provide an independent assessment on the alignment of the Green Bond Framework with the GBP and attest as to the positive impact of the respective Green Eligible Sectors.¹⁶⁷⁰

5.2.3 Preliminary observations

Nigeria has been successful in implementing the issuance of green bonds, witnessed in part by the oversubscription of its first Sovereign Green Bond, which came after the establishment of the Nigerian Green Bond Market Development Programme.¹⁶⁷¹ This programme has been able to achieve a series of strategic objectives in the form

¹⁶⁶⁸ UNFCCC 2017 <https://www.climatebonds.net/files/files/UNEP%20Nigeria%20Green%20Bond%20Framework.pdf> 8.

¹⁶⁶⁹ See para 3.6.2 above.

¹⁶⁷⁰ UNFCCC 2017 <https://www.climatebonds.net/files/files/UNEP%20Nigeria%20Green%20Bond%20Framework.pdf> 9.

¹⁶⁷¹ CBI 2019 <https://www.climatebonds.net/files/reports/nigerian-green-bond-market-development-programme-state-of-the-market-final.pdf>.

of bi-lateral engagements, training and capacity building.¹⁶⁷² Nigerian-based licensed verifiers and the training of pension fund administrators as potential investors have been part of the success of the programme.¹⁶⁷³ The facilitation of the issuance of the maiden corporate bond by Access Bank PLC, which was the first corporate green bond in Africa in collaboration with the Securities and Exchange Commission (SEC), in turn led to the development of the SEC's Green Bond Listing Rules. This sparked an increase in activity in the issuance of green bonds in Nigeria.¹⁶⁷⁴ The Federal Government of Nigeria (FGN) launched the National Development Plan - the Economic Recovery and Growth Plan (ERGP) - in which Programme 47 of the plan involves the regular issuance of green bonds to address climate-related issues¹⁶⁷⁵ and to fund projects with impacts that contribute to the NDCs.¹⁶⁷⁶ The FGN has been able to issue "series 1 and 2" sovereign green bonds to fund renewable energy, sustainable forestry management and clean transport.¹⁶⁷⁷ Having taken the lead, the FGN was able to influence the market through the issuance of several bonds when several banking institutions issued green bonds of their own.¹⁶⁷⁸ The Access Bank issued the first certified corporate green bond in Africa to the value of NGN15 billion at a fixed coupon rate of 15,5 % for tenure of 5 years to fund flood defence, refinancing agriculture projects, energy efficiency and renewable energy.¹⁶⁷⁹ North South Power (NSP) issued a NGN8,5 billion 15 year 15,6 % Series 1 Guaranteed Fixed Rate Senior

¹⁶⁷² CBI 2019 <https://www.climatebonds.net/files/reports/nigerian-green-bond-market-development-programme-state-of-the-market-final.pdf>.

¹⁶⁷³ CBI 2019 <https://www.climatebonds.net/files/reports/nigerian-green-bond-market-development-programme-state-of-the-market-final.pdf>.

¹⁶⁷⁴ CBI 2019 <https://www.climatebonds.net/files/reports/nigerian-green-bond-market-development-programme-state-of-the-market-final.pdf>.

¹⁶⁷⁵ CBI 2019 <https://www.climatebonds.net/files/reports/nigerian-green-bond-market-development-programme-state-of-the-market-final.pdf>.

¹⁶⁷⁶ CBI 2019 <https://www.climatebonds.net/files/reports/nigerian-green-bond-market-development-programme-state-of-the-market-final.pdf>.

¹⁶⁷⁷ CBI 2019 <https://www.climatebonds.net/files/reports/nigerian-green-bond-market-development-programme-state-of-the-market-final.pdf>.

¹⁶⁷⁸ CBI 2019 <https://www.climatebonds.net/files/reports/nigerian-green-bond-market-development-programme-state-of-the-market-final.pdf>.

¹⁶⁷⁹ CBI 2019 <https://www.climatebonds.net/files/reports/nigerian-green-bond-market-development-programme-state-of-the-market-final.pdf>.

Green Infrastructure Bond, due in 2034 under a N50 billion Debt Issuance Programme.¹⁶⁸⁰

Part of the Nigerian success in the implementation of the green bond programme has been as a result of clear process guidelines issued by the Federal Ministry of Environment¹⁶⁸¹ and regulated by the Securities Exchange Commission of Nigeria.¹⁶⁸² These process guidelines are enforced by the SEC and encourage transparency and disclosure in promoting the integrity and accountability in the development of the market.¹⁶⁸³ A Green Rating system has been integrated which is referred to as a "Green Bond Assessments" (GBAs) which is provided by rating agencies such as Moody's.¹⁶⁸⁴ The rating system has a GB1 (Excellent) to GB5 (Poor) scoring.¹⁶⁸⁵ The NSE is integral in enforcing compliance of pre and post reporting of listed green bonds.¹⁶⁸⁶ The formation of a six-member committee consisting of senior representatives of MDAs was formed with the task of:

- Harmonising post-issuance processes and drive compliance with CBI reporting standards, as the sovereign green bond serves as a benchmark to corporates;
- To work with the MDAs to conduct a portfolio review and ascertain the possibility of private sector financing of green public assets.¹⁶⁸⁷

The Nigerian Stock Exchange signed a Green Bonds Memorandum of Understanding (MoU) at the annual meeting of the World Federation of Exchanges in Singapore on

¹⁶⁸⁰ CBI 2019 <https://www.climatebonds.net/files/reports/nigerian-green-bond-market-development-programme-state-of-the-market-final.pdf>.

¹⁶⁸¹ Federal Government of Nigeria 2019 <https://www.chapelhilldenham.com/public/assets/campaign/Green%20Bonds%20FAQ%2006022019.pdf> 2.

¹⁶⁸² CBI 2019 <https://www.climatebonds.net/files/reports/nigerian-green-bond-market-development-programme-state-of-the-market-final.pdf>.

¹⁶⁸³ CBI 2019 <https://www.climatebonds.net/files/reports/nigerian-green-bond-market-development-programme-state-of-the-market-final.pdf>.

¹⁶⁸⁴ Federal Government of Nigeria 2019 <https://www.chapelhilldenham.com/public/assets/campaign/Green%20Bonds%20FAQ%2006022019.pdf> 2.

¹⁶⁸⁵ Federal Government of Nigeria 2019 <https://www.chapelhilldenham.com/public/assets/campaign/Green%20Bonds%20FAQ%2006022019.pdf> 2.

¹⁶⁸⁶ CBI 2019 <https://www.climatebonds.net/files/reports/nigerian-green-bond-market-development-programme-state-of-the-market-final.pdf>.

¹⁶⁸⁷ CBI 2019 <https://www.climatebonds.net/files/reports/nigerian-green-bond-market-development-programme-state-of-the-market-final.pdf>.

9 October 2019.¹⁶⁸⁸ The MoU established an agreement between the Nigerian Stock Exchange and that of Singapore on "sharing best practices and organizing joint initiatives in their respective markets".¹⁶⁸⁹ Such MoUs could, for example, also be agreed upon amongst African countries. Nigeria is in the process of issuing its third Green Bond, which has again been oversubscribed, with the intention of raising NGN25 billion to finance environmental projects in renewable energy, sustainable waste and water management, sustainable land use, clean transportation, and climate change adaptation.¹⁶⁹⁰ This is in line with its Nationally Determined Contribution to reduce GHG emissions by 45 per cent by 2030.¹⁶⁹¹

In the next paragraph the position in Kenya will be considered.

5.3 Kenya

Kenya's Vision 2030 provides a long-term development blueprint of the country aiming to transform it into "a newly industrializing, middle-income country providing high quality of life for all its citizens in a clean and secure environment".¹⁶⁹² Kenya has set itself upon a climate resilient development pathway to achieve long-term sustainable economic growth. In an attempt to adequately deal with climate change impacts Kenya has progressively implemented climate change mitigation strategies and frameworks. An analysis of some of these strategies and policies will be investigated. The Kenyan Climate Action Plan emphasises sustainable development and mitigation objectives and realises that Kenya will have to attract international climate finance to build capacity in relation to technology and skills development.¹⁶⁹³ Green bonds which form a critical element of climate finance are crucial to

¹⁶⁸⁸ Offiong 2019 <https://www.climatescorecard.org/2019/12/president-issues-climate-change-action-plan-expansion-of-green-bonds-program-stakeholder-capacity-building-efforts/>.

¹⁶⁸⁹ Offiong 2019 <https://www.climatescorecard.org/2019/12/president-issues-climate-change-action-plan-expansion-of-green-bonds-program-stakeholder-capacity-building-efforts/>.

¹⁶⁹⁰ Takouleu 2020 <https://www.afrik21.africa/en/nigeria-to-launch-3rd-green-bond-to-fund-several-eco-friendly-projects/>.

¹⁶⁹¹ Takouleu 2020 <https://www.afrik21.africa/en/nigeria-to-launch-3rd-green-bond-to-fund-several-eco-friendly-projects/>.

¹⁶⁹² Government of Kenya 2007 https://www.researchictafrica.net/countries/kenya/Kenya_Vision_2030_-_2007.pdf vii.

¹⁶⁹³ *National Climate Change Action Plan 2013-2017* 27.

development plans and bringing in diversified funding. Kenya has therefore developed a Green Bond Programme which will be discussed in 5.3.2.

5.3.1 Climate change legal framework-mandate for climate change mitigation

Kenya's foundational basis for its climate change response is based upon the UNFCCC.¹⁶⁹⁴ Kenya as an active member of the global community signed the UNFCCC on 12 June 1992 and ratified the Convention on 30 August 1994.¹⁶⁹⁵ Kenya, like any other Sub-Saharan country, is faced with many vulnerabilities to climate change demonstrated by the significantly reduced rainfall unable to support harvests or livestock rearing that so many rely on.¹⁶⁹⁶ Kenya meets most of the IPCC's indicators for climate change.¹⁶⁹⁷ The change is palpable especially for the pastoralists who depend on their herds and grazing lands.

This vulnerability has its foundations in the nature of the projected changes in climate, disproportionate dependence on natural resources and environmental services for economic development and livelihood support, and the country's low adaptive capacity.¹⁶⁹⁸ Temperature increases in excess of 2.5°C by 2050 are expected to have devastating effects on agriculture.¹⁶⁹⁹ Research has concluded that Kenya like many other countries in the region will be severely affected by adverse climate change and is vulnerable to increased flooding and intense droughts, spread of malaria, dwindling energy resources and the attendant impacts on physical infrastructure and economic and social settings.¹⁷⁰⁰

¹⁶⁹⁴ See para 3.2.2 above.

¹⁶⁹⁵ Government of Kenya 2018 <https://www.lse.ac.uk/GranthamInstitute/wp-content/uploads/2018/10/8737.pdf>.

¹⁶⁹⁶ Oulu 2011 *Climate Law* 375.

¹⁶⁹⁷ *National Climate Change Action Plan* 2013-2017 Vision 2030, such as the "number of nights with temperatures below/above certain threshold values", cold and warm spells indicators, the daily temperature range, extremely wet days and the number of heavy precipitation days.

¹⁶⁹⁸ Oulu 2011 *Climate Law* 375.

¹⁶⁹⁹ Ministry of Foreign Affairs of the Netherlands 2018 file:///C:/Users/p10180869/Downloads/Kenya%20(2).pdf.

¹⁷⁰⁰ Oulu 2011 *Climate Law* 375; Ministry of Foreign Affairs of the Netherlands 2018 <https://www.government.nl/documents/publications/2019/02/05/climate-change-profiles>.

Some of these impacts are already noticeable, for example, the Rift Valley increasingly experiences droughts and extreme floods combined with mudslides.¹⁷⁰¹ The temperature increase has already affected glacier melt from Mount Kilimanjaro reducing water availability in the region and surrounding river systems.¹⁷⁰² Coastal areas have already started to experience sea level rises of 0.3 metres affecting the coastal populations to seek higher ground and inadvertently affecting their livelihoods derived from fishing and tourism.¹⁷⁰³ Mombasa which is the second largest city in Kenya, a prime tourist hotspot, is threatened with flooding.¹⁷⁰⁴ Submerged land, loss of tourism, and biodiversity loss are just some of the implications of the impacts of climate change in this region.¹⁷⁰⁵ Coastal erosion, loss of coastal wetlands, and saltwater intrusion are expected to further cause economic hardships upon those dependent on the coastal economic system.¹⁷⁰⁶ Total economic costing can only be an estimation which is said to be in the region of US\$ 7-58 million per year by 2030 and US\$ 31-313 million per year by 2050, astronomical figures for a developing country.¹⁷⁰⁷ Kenya is acutely affected by natural disasters ranked 6th globally among all countries affected by natural disasters (first in East Africa), 7th by number of victims caused by disasters of which half are climatological and the other half are hydrological events.¹⁷⁰⁸ Every five years Kenya's GDP is affected by a combination of severe droughts and floods which cause economic impacts of 8% (losses) to the *fiscus* and increasingly floods have resulted in losses of human life.¹⁷⁰⁹

¹⁷⁰¹ Ministry of Foreign Affairs of the Netherlands 2018 <https://www.government.nl/documents/publications/2019/02/05/climate-change-profiles>.

¹⁷⁰² Ministry of Foreign Affairs of the Netherlands 2018 <https://www.government.nl/documents/publications/2019/02/05/climate-change-profiles>.

¹⁷⁰³ Ministry of Foreign Affairs of the Netherlands 2018 <https://www.government.nl/documents/publications/2019/02/05/climate-change-profiles>.

¹⁷⁰⁴ Olashore 2019 *ELR* 200.

¹⁷⁰⁵ Olashore 2019 *ELR* 200.

¹⁷⁰⁶ Ministry of Foreign Affairs of the Netherlands 2018 <https://www.government.nl/documents/publications/2019/02/05/climate-change-profiles>.

¹⁷⁰⁷ Ministry of Foreign Affairs of the Netherlands 2018 <https://www.government.nl/documents/publications/2019/02/05/climate-change-profiles>.

¹⁷⁰⁸ Ministry of Foreign Affairs of the Netherlands 2018 <https://www.government.nl/documents/publications/2019/02/05/climate-change-profiles> 4.

¹⁷⁰⁹ Ministry of Foreign Affairs of the Netherlands 2018 <https://www.government.nl/documents/publications/2019/02/05/climate-change-profiles>.

The Kenyan government in 2010 acknowledged in their National Climate Change Response Strategy (NCCRS) that "the evidence of climate change in Kenya is unmistakable".¹⁷¹⁰ The climate change response is anchored in the *Constitution of Kenya*, 2010¹⁷¹¹ that provides for environmental protection. The specific measures to give effect to the Constitution are to be found in the country's legislation.¹⁷¹² Climate change action and its legal framework is entrenched in the Constitution as seen, for example, in articles 10 and 42.¹⁷¹³ Article 10 sets out national values and principles of governance, such as sustainable development, devolution of government and public participation, whilst article 42 provides for the right to a clean and healthy environment, which also includes the right to have the right to the protection of the environment for the benefit of present and future generations through legislative and other measures.¹⁷¹⁴

The *Climate Change Act*, 2016¹⁷¹⁵ commenced on 27 May 2016 and was the first climate change-dedicated legislation in Africa consisting of seven parts and thirty-six sections.¹⁷¹⁶ The Act guides Kenya's climate change response through mainstreaming climate change into various sectors' functions.¹⁷¹⁷ The Act further provides for

¹⁷¹⁰ Government of Kenya 2012 https://www.adaptation-undp.org/sites/default/files/downloads/kenya_nccap_.pdf. See also Kibugi "Common but differentiated responsibilities in a North-South context" 613-626; Olashore 2019 *ELR* 189-209; Baimwera and Wangombe 2018 *IJCA* 70-96.

¹⁷¹¹ Constitution of Kenya 2010 <http://kenyalaw.org/8181/exist/kenyalex/actview.xql?actid=Const2010>.

¹⁷¹² Rumble "Climate change legislative development on the African continent" 51.

¹⁷¹³ Government of Kenya 2007 https://www.researchictafrica.net/countries/kenya/Kenya_Vision_2030_-_2007.pdf; Government of Kenya 2018 <https://www.lse.ac.uk/GranthamInstitute/wp-content/uploads/2018/10/8737.pdf>. Government of Kenya 2007 <https://nairobi.aics.gov.it/wp-content/uploads/2019/01/Kenya-Vision-2030.pdf>. On the Constitution and the environmental right, see Mwanza 2020 *ELR* 184-197; Chore 2019 *Strathmore LR* 70-87; Soyapi 2019 *JEL* 151-161; Okong'o 2017 *ELM* 103-109.

¹⁷¹⁴ Government of Kenya 2007 https://www.researchictafrica.net/countries/kenya/Kenya_Vision_2030_-_2007.pdf; Government of Kenya 2018 <https://www.lse.ac.uk/GranthamInstitute/wp-content/uploads/2018/10/8737.pdf>. Government of Kenya 2007 <https://nairobi.aics.gov.it/wp-content/uploads/2019/01/Kenya-Vision-2030.pdf>.

¹⁷¹⁵ 11 of 2016.

¹⁷¹⁶ Government of Kenya 2016 <http://kenyalaw.org/kl/fileadmin/pdfdownloads/Acts/ClimateChangeActNo11of2016>.

¹⁷¹⁷ Government of Kenya 2007 https://www.researchictafrica.net/countries/kenya/Kenya_Vision_2030_-_2007.pdf; Government of Kenya 2018 <https://www.lse.ac.uk/GranthamInstitute/wp-content/uploads/2018/10/8737.pdf>. Government of Kenya 2007 <https://nairobi.aics.gov.it/wp-content/uploads/2019/01/Kenya-Vision-2030.pdf>.

mechanisms and measures to achieve a low carbon climate development framework,¹⁷¹⁸ as stated in section 3.¹⁷¹⁹

A National Climate Change Council is established in terms of section 5 of the Act, chaired by the President of Kenya and the Deputy President serves as its deputy vice-chairperson.¹⁷²⁰ The legal status of the Council is provided by section 5 of the Act which provides for representation of various stakeholders on the council whilst section 6 of the council provides for the functions of the council. Section 7 of the Act provides for the nine appointed members of the council by the President. At the core of the Council's functions is the provision of an overarching mechanism for the coordination of climate change initiatives and actions.¹⁷²¹ The inclusion of the Presidency serves to overcome sectoral challenges within climate change governance and also serves as a demonstration of the seriousness and commitment of the state to issues of climate change.¹⁷²² The Council also hears representations from non-state actors such as the private sector, civil society, the "marginalised community"¹⁷²³ and key national and sub-national government institutions.¹⁷²⁴ This, by extension, includes oversight over several other plans which provide for mitigation and adaptation.¹⁷²⁵ The Council has several further powers amongst which it can impose "climate change duties on the public sector" and also impose "climate change obligations on private entities".¹⁷²⁶ The obligations are not stipulated in the Act but it is presumed that such obligations entail the limitation of GHG emissions and this could allow for the exclusive raising of funding through green bonds.¹⁷²⁷

¹⁷¹⁸ *Climate Change Act* 2016; Naeku 2020 *Kenya ELR* 170-183; Wambua 2019 *CCLR* 257-269.

¹⁷¹⁹ Section 3 of the *Climate Change Act* 2016 that the Act "shall be applied for the development, management, implementation and regulation of mechanisms to enhance climate change resilience and low carbon development for the sustainable development of Kenya".

¹⁷²⁰ Section 5(2)(3).

¹⁷²¹ Section 6.

¹⁷²² Rumble "Climate change legislative development on the African continent" 51.

¹⁷²³ Section 56 of the Constitution; Minorities are defined under Chapter IV s 21(3) as women, older members of society, persons with disabilities, children, youth, members of minority or marginalised communities, and members of particular ethnic, religious or cultural communities.

¹⁷²⁴ Sections 6, 7 and 24 of the Act.

¹⁷²⁵ Opinions of the authors. Rumble "Climate change legislative development on the African continent" 51.

¹⁷²⁶ Sections 15 and 16 of the *Climate Change Act*, 2016.

¹⁷²⁷ Rumble "Climate change legislative development on the African continent" 52.

The Council is responsible for the approval of the National Climate Change Action Plan¹⁷²⁸ and its implementation.¹⁷²⁹ The Cabinet Secretary formulated the National Climate Change Action Plan to provide guidance on achieving a low carbon and climate resilient sustainable development plan.¹⁷³⁰ The advice of the Council permeates from the national to the county levels whereupon policy and other measures are implemented so as to try and attain the low carbon climate change and resilient development that is so desperately required.¹⁷³¹ The Climate Change Directorate reports to the Cabinet Secretary on matters pertaining to national climate change plans and the Directorate shall be the lead agency on the various climate change plans and actions.¹⁷³²

The National Climate Change Action Plan¹⁷³³ enables key strategies for mitigating and adaption of climate change's key issues. The strategies relate to environmental finance, environmental policy and legislation, knowledge management of the environment, capacity development of critical skills required in the transition, technology requirements in reducing GHG and monitoring and reporting, that will have to provide pathways that create the resilient economies and responsive agility required of government in dealing with climate change.¹⁷³⁴ The plan was developed through broad and elaborate consultation in which over sixty technical reports were developed by international consultants guided by seven Kenyan based thematic working groups under the oversight of a multi-sector stakeholder taskforce.¹⁷³⁵ As a result of the cross cutting dynamics of climate change, planning this procedure was essential to get the buy-in from all those concerned as it allowed for more

¹⁷²⁸ Drafted in terms of s 13(3)(a) of the Act - Government of Kenya 2007 https://www.researchictafrica.net/countries/kenya/Kenya_Vision_2030_-_2007.pdf; Government of Kenya 2018 <https://www.lse.ac.uk/GranthamInstitute/wp-content/uploads/2018/10/8737.pdf>. Government of Kenya 2007 <https://nairobi.aics.gov.it/wp-content/uploads/2019/01/Kenya-Vision-2030.pdf>.

¹⁷²⁹ Section 6(a)-(b) of the Act.

¹⁷³⁰ Section 8(2)(a).

¹⁷³¹ Section 6(c) of the Act.

¹⁷³² Section 9 of the Act.

¹⁷³³ Kenya Climate Change Action Plan 2013 <https://www.kccap.info>.

¹⁷³⁴ Kenya Climate Change Action Plan 2013 <https://www.kccap.info>.

¹⁷³⁵ Kenya Climate Change Action Plan 2013 <https://www.kccap.info>.

engagement in the updating and tracking of the plan on a five-year cycle.¹⁷³⁶ This broad participation and engagement during the drafting of the National Action Plan may provide for an enduring solution to climate change issues, ensuring continued sharing of information and knowledge.¹⁷³⁷

The final plan identifies enablers which are supported by actions. A summary of the enablers is shown in Table 5.5.¹⁷³⁸

¹⁷³⁶ Government of Kenya 2012 https://www.adaptation-undp.org/sites/default/files/downloads/kenya_nccap_.pdf.

¹⁷³⁷ Olashore 2019 *ELR* 202.

¹⁷³⁸ Government of Kenya 2012 https://www.adaptation-undp.org/sites/default/files/downloads/kenya_nccap_.pdf 41.

Table 5.5: Enabling actions to support the transition to a low carbon climate action resilient development pathway¹⁷³⁹

Action plan chapter	Recommended enabling actions	Importance in the transition to a low carbon climate resilient future
Financing implementation of the Action Plan	-Undertake targeted interventions to help overcome weakness in the investment climate: one stop shop for permits and licenses; standardized Power Purchase Agreements for renewable energy; improvements to the Feed in Tariff regime; the development of a national energy efficiency policy and greater coordination of technical assistance programmes. -Establish the Kenya National Climate Fund as the primary vehicle for receiving and disbursing international climate finance -Establish a carbon trading platform to market Kenya's carbon market activity.	-Finance is essential, requiring a mix of international and domestic climate finance that leverages public and private sources. -Improves investment climate. -Strengthens Kenya's position as credible and attractive destination for international climate finance flows. -Improves access to carbon finance. -Improves absorptive capacity -Improves promotion and marketing of Kenya's carbon market activities
Regulatory and Policy Framework	-Enact an overarching standalone climate change law -Amend sectoral laws to facilitate priority actions -Establish a high-level National Climate Change Council to provide oversight and coordination -Establish a Climate Change Secretariat as the main technical mechanism to deliver on the Action Plan	-Provides legitimacy -Sets goals -Encourage transparency and openness -Regulates conduct and establishes sanctions to ensure compliance -Promotes coherent, crosscutting action -Promotes investment.

¹⁷³⁹ Government of Kenya 2012 https://www.adaptation-undp.org/sites/default/files/downloads/kenya_nccap_.pdf 41.

Knowledge Management and Development	-Establish a climate change information and knowledge management to collect, generate and analyse climate change knowledge products -Disseminate climate change knowledge products to potential beneficiaries, especially women and other groups, through improved public awareness and communication -Develop collaborative partnerships to engage government and civil society -Integrate climate change in the education system and all other professional practices	-Improves capacity to face new challenges posed by climate change -Improves knowledge of what works for people, at the national and local level, including indigenous knowledge as recognised in the Constitution Article 11 (2) (b) -Provides access to and sharing of climate change knowledge -Facilitates capturing of best practices from outside Kenya's borders to support cross country learning -Guides strategy, planning and implementation through improved links between science and evidence-based policy and planning
Technology	-Identify priority technologies using the updated Technology Needs Assessment -Establish and support climate change technology promotion centres -Upgrade codes and regulations to promote low carbon climate resilient technology choices -Promote research and development to ensure appropriate technology use and development	-Facilitates the introduction of leading-edge technology and leapfrogging to the best technologies -Develops indigenous technology in line with Article 35 of the Constitution and technology assessment -Improves technology cooperation -Improves the innovation and knowledge base in Kenya
Performance Management and Benefit Management Framework	-Measure benefits and results, including increasing resilience to climate change and emission reductions, using the MRV+ system -Identify key synergies between adaptation and mitigation outcomes -Report on links between low carbon climate resilient actions and national priorities and sectoral objectives -Track Kenya's voluntary contributions to address adaptation and mitigation -Track international support and the results generated	-Ensures effectiveness and accountability of climate change actions -Attracts funding through proper accounting and cost-effective use of resources -Reinforces synergies between adaptation and mitigation outcomes -Facilitates Reporting to the UNFCCC on progress to adapt to climate change, reduce GHG emissions and achieve the Conventions climate goals

A robust climate finance policy framework has been established in Kenya to create enabling conditions for an effective management and delivery of projected outcomes.¹⁷⁴⁰ As a result of the *Climate Change Act*, 2016 which provides a regulatory framework for an enhanced response to climate change, institutional arrangements have been made for climate financing.¹⁷⁴¹ The National Climate Fund has been established as a result of the Act which acts as a mechanism for supporting climate change actions and interventions approved by the National Climate Change Council.¹⁷⁴² The Council administers the Climate Change Fund,¹⁷⁴³ a necessary step in finding prioritised climate change actions and interventions that require a reimagined funding model in the reduction of GHG.¹⁷⁴⁴

The Climate Change fund is vested and managed by the National Treasury.¹⁷⁴⁵ The *Climate Change Act*, 2016 has also given rise to the National Policy on Climate Finance in February 2018.¹⁷⁴⁶ The National Policy on Climate Finance is viewed as catalysing the attainment of Vision 2030 and aligning climate finance to the country's development agenda.¹⁷⁴⁷ The broader objective of the policy is that it provides legal and institutional frameworks for guiding and promoting climate finance flows in Kenya and reporting climate finance through budget tracking.¹⁷⁴⁸ The National Treasury acts as the implementing provider of the National Policy on Climate Change in Kenya therefore providing the dual function of financial and technical support, with the

¹⁷⁴⁰ Odhengo *et al* / <https://www.adaconsortium.org/index.php/component/k2/item/397-climate-finance-in-kenya-review-and-future-outlook> 13.

¹⁷⁴¹ Odhengo *et al* / <https://www.adaconsortium.org/index.php/component/k2/item/397-climate-finance-in-kenya-review-and-future-outlook> 13.

¹⁷⁴² Odhengo *et al* / <https://www.adaconsortium.org/index.php/component/k2/item/397-climate-finance-in-kenya-review-and-future-outlook> 13.

¹⁷⁴³ Section 6(g) of the Act.

¹⁷⁴⁴ Section 6(g) of the Act.

¹⁷⁴⁵ Odhengo *et al* / <https://www.adaconsortium.org/index.php/component/k2/item/397-climate-finance-in-kenya-review-and-future-outlook> 13.

¹⁷⁴⁶ Sessional Paper No 3 of 2017. Also see Odhengo *et al* / <https://www.adaconsortium.org/index.php/component/k2/item/397-climate-finance-in-kenya-review-and-future-outlook> 13.

¹⁷⁴⁷ Odhengo *et al* / <https://www.adaconsortium.org/index.php/component/k2/item/397-climate-finance-in-kenya-review-and-future-outlook> 13.

¹⁷⁴⁸ Odhengo *et al* / <https://www.adaconsortium.org/index.php/component/k2/item/397-climate-finance-in-kenya-review-and-future-outlook> 13.

strategic coordination of the other arms of government such as the Ministry of Environment and Forestry's Climate Change Directorate.¹⁷⁴⁹

The development of the Kenyan National Climate Fund as per the above Table 5.5, is a step in the right direction in an attempt to coordinate climate finance flows showing commitment like all initiatives to broaden the actions of the government. However, to leverage the capital amounts that are required for climate change, a market solution is more plausible in the view of the author. Technical inefficiencies such as capacity gaps in both financial and personnel makes it difficult for government entities to manage the finances from a fragmented climate finance landscape. Some of the barriers are more political and global in nature, this it is strongly felt would delay funding of mitigation and adaptation projects which could be easily funded by a non-complicated green bond framework with all its built-in safety nets. Green bonds complement the above plan, they do not deviate from the objectives of the plan as it can be said that they provide diversification of funding and signal to the market the green objectives of the government.

The counties have jurisdiction as set out in the Fourth Schedule (Part 2) of the Constitution in the delivery and funding allocation of the *Climate Change Act*, 2016.¹⁷⁵⁰ Counties have considerable scope in furthering the climate change strategy through article 203(2) of the Constitution which provides for county governments to be allocated 15 per cent of the national revenue in the implementation of climate change related projects, though more often than not this budget allocation is surpassed.¹⁷⁵¹ Counties are able to influence the type of investments that are investable in their counties because of the received amounts which often exceed the minimum 15 per cent. Counties can use the funds to ensure that their governments

¹⁷⁴⁹ Odhengo *et al* <https://www.adaconsortium.org/index.php/component/k2/item/397-climate-finance-in-kenya-review-and-future-outlook> 13.

¹⁷⁵⁰ Government of Kenya 2007 https://www.researchictafrica.net/countries/kenya/Kenya_Vision_2030_-_2007.pdf; Government of Kenya 2018 <https://www.lse.ac.uk/GranthamInstitute/wp-content/uploads/2018/10/8737.pdf>. Government of Kenya 2007 <https://nairobi.aics.gov.it/wp-content/uploads/2019/01/Kenya-Vision-2030.pdf> 30.

¹⁷⁵¹ Government of Kenya 2007 https://www.researchictafrica.net/countries/kenya/Kenya_Vision_2030_-_2007.pdf; Government of Kenya 2018 <https://www.lse.ac.uk/GranthamInstitute/wp-content/uploads/2018/10/8737.pdf>. Government of Kenya 2007 <https://nairobi.aics.gov.it/wp-content/uploads/2019/01/Kenya-Vision-2030.pdf> 30.

are able to perform their allocated functions, it is therefore possible in the opinion of the author that they could leverage the allocated funds to raise green bonds and fund their green investments. Developmental needs and the need for economic optimisation of each county could be the needed impetus for the raising of green bonds to optimise their capacity to raise revenue.

Similar, to other progressive Constitutions, the Kenyan Constitution through article 70 recognises the enforcement of environmental rights. Article 23 of the *Climate Change Act* states that:

- (1) A person may, pursuant to Article 70 of the Enforcement of Constitution, apply to the Environment and Land Court relating to climate change alleging that a person has acted in a manner that has or is likely to adversely affect efforts towards mitigation and adaptation to the effects of climate change.
- (2) Where an application is made under sub-section (1), the Court may make an order or give directions that it considers appropriate to prevent, stop or discontinue an act or omission that is harmful to the environment; compel a public officer to take measures to prevent or discontinue an act or omission that is harmful to the environment; or provide compensation to a victim of a violation relating to climate change duties.
- (3) For the purposes of this section, an applicant does not have to demonstrate that a person has incurred loss or suffered injury.¹⁷⁵²

The Council sets targets for GHG for each sector.¹⁷⁵³ The targets in turn "set a long-term trajectory and send a signal of political intent to business and civil society".¹⁷⁵⁴ State departments must report on sectoral GHGs.¹⁷⁵⁵ There is also reference to the private sector being imposed with "climate change obligations" without clearly stating how this could be imposed.¹⁷⁵⁶ Limitations on GHG emissions can best be captured by means of setting a regulatory framework which set the limits.¹⁷⁵⁷ This allows for the development of an inventory that implements and reports on GHG emissions.¹⁷⁵⁸

¹⁷⁵² Section 23 *Climate Change Act* 2016.

¹⁷⁵³ Section 6(h) of the Act.

¹⁷⁵⁴ Rumble "Climate change legislative development on the African continent" 55.

¹⁷⁵⁵ Rumble "Climate change legislative development on the African continent" 55.

¹⁷⁵⁶ Rumble "Climate change legislative development on the African continent" 55.

¹⁷⁵⁷ Rumble "Climate change legislative development on the African continent" 55.

¹⁷⁵⁸ Rumble "Climate change legislative development on the African continent" 55.

The very nature of climate change being highly unpredictable requires the use of data analysis to bring about predictability of climatic impacts. Data on carbon emissions would track compliance related requirements and provide information on specific sectors that are producing emissions which in-turn would provide the necessary mitigatory approaches and anticipatory plans to reduce the climate risks. Green bonds as a market solution to climate risks would provide the funding for the projects that would be implemented. Targets would provide for monitoring and a context for incremental or sudden fluctuations in the rate of increase of urbanisation, population growth and future emissions from economic activity.¹⁷⁵⁹

5.3.2 Existing green bonds regulatory framework

To give effect to the aims of the *Climate Change Act*, 2016, several financial institutions launched Green Bonds Programmes endorsed by the Central Bank of Kenya.¹⁷⁶⁰ These programmes are coordinated under the Sustainable Finance Initiative, which is sanctioned by the National Treasury, Central Bank of Kenya as well as the Capital Markets Authority.¹⁷⁶¹ Kenya is in the process of developing a Sovereign Green Bond which is seen as supporting the National Strategy under Vision 2030.¹⁷⁶² The National Climate Action Plan 2013-2017 paved the way for significant attention to be given to climate finance.¹⁷⁶³ As has been seen above, the 2016 *Climate Change Act* established a national Kenya Climate Fund which is described as "a financing mechanism for priority climate change actions and interventions".¹⁷⁶⁴

¹⁷⁵⁹ Government of Kenya 2007 https://www.researchictafrica.net/countries/kenya/Kenya_Vision_2030_-_2007.pdf 1.

¹⁷⁶⁰ Government of Kenya 2007 https://www.researchictafrica.net/countries/kenya/Kenya_Vision_2030_-_2007.pdf.

¹⁷⁶¹ Government of Kenya 2007 https://www.researchictafrica.net/countries/kenya/Kenya_Vision_2030_-_2007.pdf.

¹⁷⁶² Government of Kenya 2007 https://www.researchictafrica.net/countries/kenya/Kenya_Vision_2030_-_2007.pdf.

¹⁷⁶³ Government of Kenya 2007 https://www.researchictafrica.net/countries/kenya/Kenya_Vision_2030_-_2007.pdf.

¹⁷⁶⁴ *Climate Change Act*.

In 2017 Kenya started the Kenya Green Bond Programme (GBPK).¹⁷⁶⁵ Sovereign Bonds form an integral part of the national sustainability strategy outlined in the Vision 2030, the National Policy on Climate Finance enacted in February 2018 as Sessional Paper No. 3 of 2017 and the Green Economy Strategy and Implementation Plan (GESIP) 2016-2030.¹⁷⁶⁶ The GESIP is "focused on the main binding social economic constraints towards the attainment of Kenya's Vision 2030" with its guiding principles being sustainable consumption and production, equity and social inclusion, resource efficiency, polluter-pays-principle, precautionary principle and good governance.¹⁷⁶⁷ The GESIP aims to transition Kenya to "a low carbon, resource efficient equitable and inclusive socio-economic transformation".¹⁷⁶⁸ These policies constitute efforts by the Government to propagate the sustainable development agenda by tackling fundamental challenges such as poverty, unemployment, environmental degradation, climate change and variability, infrastructure gaps and food security.¹⁷⁶⁹ Large capital commitments have been made by the GESIP to invest US\$23,5 billion in Kenya's green growth path.¹⁷⁷⁰ Priority sectors are identified by these policies and this critical targeting provides the necessary support for sustainable development in the transition to a green economy.¹⁷⁷¹ In the African context, growth has primarily been limited by a combination of governance and capital investments into key sectors that have the potential to unlock the broader economy.¹⁷⁷² Green bonds in Kenya have been identified as a tool to mobilise private capital towards the transition to a green economy.¹⁷⁷³ As a regional leader in East Africa, Kenya potentially has the comparative advantage of attracting the renewable energy trend emerging in which there has been "a geographic shift towards emerging and

¹⁷⁶⁵ Government of Kenya 2007 https://www.researchictafrica.net/countries/kenya/Kenya_Vision_2030_-_2007.pdf.

¹⁷⁶⁶ CBI 2020 file:///C:/Users/p10180869/Downloads/gbpk-background-document.pdf 6.

¹⁷⁶⁷ Government of Kenya 2016 <https://wedocs.unep.org/handle/20.500.11822/3304> 27.

¹⁷⁶⁸ Government of Kenya 2016 <https://wedocs.unep.org/handle/20.500.11822/3304> 1.

¹⁷⁶⁹ CBI 2020 file:///C:/Users/p10180869/Downloads/gbpk-background-document.pdf 10.

¹⁷⁷⁰ Government of Kenya 2007 https://www.researchictafrica.net/countries/kenya/Kenya_Vision_2030_-_2007.pdf.

¹⁷⁷¹ CBI 2020 file:///C:/Users/p10180869/Downloads/gbpk-background-document.pdf 10.

¹⁷⁷² Nissanke 2019 *Structural Change and Economic Dynamics* 104.

¹⁷⁷³ CBI 2020 file:///C:/Users/p10180869/Downloads/gbpk-background-document.pdf 10.

developing markets attracting most of the renewable energy investments accounting for 63 per cent of the 2018 renewable power investments globally".¹⁷⁷⁴

Green bonds are regulated by the *Capital Markets Act*, 2000,¹⁷⁷⁵ Chapter 485A as amended in 2019,¹⁷⁷⁶ and the Policy Guidance Note (PGN) of 2019. The PGN guides the operational regulatory environment on green bonds in Kenya.¹⁷⁷⁷ In terms of section 13C(1) of the *Central Bank of Kenya Act*, 1966¹⁷⁷⁸ the Governor of the Central Bank is the custodian and Patron of the Green Bond Programme. He or she has to be a fit and proper person with recognisable professional qualifications and experience at senior finance management level and has to oversee the programme.¹⁷⁷⁹ It adds credibility to the programme to have the Governor as the Patron in a fledgling market. This appointment is strategic for international investors who may derive confidence from "a leader in financial sector innovation" to head the programme.¹⁷⁸⁰ The current Governor is also known as a "passionate environmentalist".¹⁷⁸¹

The regulation of capital markets, which are broadly categorised as markets facilitating the buying and selling of financial instruments, is regulated by the *Capital Markets Act*, 2017¹⁷⁸² in Kenya.¹⁷⁸³ The *Capital Markets Act*, 2017 defines a capital market instrument to mean "any long-term financial instrument whether in the form of debt or equity developed or traded on a securities exchange or directly between two or more parties for the purpose of raising funds for investment".¹⁷⁸⁴ Securities are defined by the *Capital Markets Act*, 2017 as:

(a) shares in the share capital of a company ("shares");

¹⁷⁷⁴ IRENA 2020 https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2020/Jan/IRENA_RE_finance_Green_bonds_2020.pdf, International Renewable Energy Agency, Abu Dhabi.

¹⁷⁷⁵ 3 of 2000.

¹⁷⁷⁶ *Capital Markets Act* 3 of 2000 Chapter 485A as amended by Act 15 of 2003 "enacted by the Parliament of Kenya for the purpose of promoting, regulating and facilitating the development of an orderly, fair and efficient Capital Markets in Kenya for connected purpose".

¹⁷⁷⁷ *Capital Markets Act* 3 of 2000 Chapter 485A as Amended by Act 15 of 2003, PGN 2019.

¹⁷⁷⁸ 15 of 1966.

¹⁷⁷⁹ CBI 2020 file:///C:/Users/p10180869/Downloads/gbpk-background-document.pdf.

¹⁷⁸⁰ CBI 2018 file:///C:/Users/p10180869/Downloads/green-bonds-annual-report.pdf.

¹⁷⁸¹ Napier 2019 <https://www.fsdafrica.org/news/whats-next-for-green-bonds-in-africa/>.

¹⁷⁸² 4 of 2017.

¹⁷⁸³ Lubeto date unknown https://www.academia.edu/33423188/Corporate_Bonds_in_Kenya_.pdf.

¹⁷⁸⁴ *Capital Markets Act* Ch 485A s 2.

- (b) any instrument creating or acknowledging indebtedness which is issued or proposed to be issued ("debt securities");
- (c) loan stock, bonds and any other instruments creating or acknowledging indebtedness by or on behalf of the Government, Central Bank, or public authority ("Government and public entities");
- (d) rights, options, or interests, whether described as units or otherwise, in, or in respect of such shares, debt securities and Government and public securities;
- (e) any right, whether conferred by warrant or otherwise, to subscribe for shares or debt securities ("warrants");
- (f) any option to acquire or dispose of any other security;
- (g) futures in respect of securities or other assets or property;
- (h) securities and collective investment scheme products structured in conformity with Islamic principles for investments;
- (i) units in a collective investment scheme, including shares in an investment company, or other similar entities whether established in Kenya or not;
- (j) interests, rights or property, whether in the form of an instrument or otherwise, commonly known as securities;
- (k) the rights under any depositary in respect of shares, debt securities and warrants ("depositary receipts");
- (l) asset backed securities; and
- (m) any other instrument prescribed by the Authority to be securities for the purpose of the Act.¹⁷⁸⁵

Several entities were involved in the launch of the Green Bond Programme, namely the Central Bank of Kenya with the Governor as programme Patron, the Kenya Bankers Association, the Nairobi Securities Exchange, the Climate Bonds Initiative, the Financial Sector Deepening (FSD) Africa and the Dutch Development Bank.¹⁷⁸⁶ The Central Bank and the Capital Markets of Kenya endorse the programme, which provides credence to the market.¹⁷⁸⁷ The financial sector buy-in is critical; it is

¹⁷⁸⁵ *Capital Markets Act* 3 of 2000 Ch 485A as Amended 2019 Part I 2.

¹⁷⁸⁶ CBI 2018 file:///C:/Users/p10180869/Downloads/green-bonds-annual-report.pdf 4.

¹⁷⁸⁷ CBI 2018 file:///C:/Users/p10180869/Downloads/green-bonds-annual-report.pdf 4.

increasingly seen as hastening the transition to sustainability and carbon neutrality.¹⁷⁸⁸ Kenya has seen in recent years extensive collaboration between the various financial sectors to mobilise large amounts of capital to meet the targets of the *Paris Agreement* and the UN Sustainable Development Goals.¹⁷⁸⁹ The NSE for instance is an active member of the Sustainable Stock Exchange (SSE) Initiative and the KBA has been championing the Sustainable Finance Initiative in the banking industry with the intention of being an enabler of sustainable finance from both the private and public sectors for climate resilient infrastructure.¹⁷⁹⁰

Green bonds, as an instrument, is a financial innovation capable of facilitating and leveraging sustainable development from the liquidity of pension funds, insurance institutions, mutual funds, sovereign wealth funds and other institutional investors by providing investment into the market that can increase sustainable infrastructure in Kenya.¹⁷⁹¹ Green bonds also allow the Kenyan Government to make a strategic shift to climate mitigation and resilience thereby protecting the broader economy from being affected by climate change impacts. It also allows for positive environmental outcomes by directing capital towards mitigation and adaptation projects that have the potential for the reduction of GHG emissions. Green bond issuance falls under the auspices of the Nairobi Stock Exchange Listing Rules¹⁷⁹² and oversight is provided by the Capital Markets Authority in Kenya.¹⁷⁹³ The distinction between green bonds and plain vanilla bonds¹⁷⁹⁴ is the criteria used in the labelling of bonds as "green".¹⁷⁹⁵ The same listing requirements are applicable to green bonds as the vanilla bonds and

¹⁷⁸⁸ Maltais and Nykvist 2020 *J Sustain Finance Invest* 1-20.

¹⁷⁸⁹ CBI 2018 file:///C:/Users/p10180869/Downloads/green-bonds-annual-report.pdf.

¹⁷⁹⁰ CBI 2018 file:///C:/Users/p10180869/Downloads/green-bonds-annual-report.pdf.

¹⁷⁹¹ Maltais and Nykvist 2020 *J Sustain Finance Invest* 1-20. Also see para 2.2.

¹⁷⁹² The NSE Listing Rules define green bonds as "a fixed income instrument whose proceeds are used to finance or refinance new or existing projects that generate climate or other environmental benefits that conforms to the Green Guidelines and Standards listed on the Exchange and is Approved by the Authority 8."

¹⁷⁹³ CBI 2018 file:///C:/Users/p10180869/Downloads/green-bonds-annual-report.pdf.

¹⁷⁹⁴ The Nairobi Securities Exchange (NSE) Listing Requirements are rules that set out the operational and procedural rules issued by the NSE Limited for the purpose of ensuring orderliness, efficiency of the market in the initial admission of securities to the Official list of the Exchange, the listing of additional shares, and the continuing listing obligations in compliance with the *Capital Markets Act* and the Regulations and Guidelines issued thereunder. The Rules are divided into six main parts.

¹⁷⁹⁵ CBI 2018 file:///C:/Users/p10180869/Downloads/green-bonds-annual-report.pdf.

any institution listing a green bond should seek approval from the relevant regulator¹⁷⁹⁶ before doing so.¹⁷⁹⁷ The structuring of the green bond should be done with the assistance of an Investment Bank and if necessary a credit rating may be sought.¹⁷⁹⁸ Green bonds with higher credit ratings may seemingly cost more but this is offset by the advantages of such a rating in the form of better transparency and better quality of the information from the issuer. These advantages are that:¹⁷⁹⁹

- A credit rating helps a lender to determine a borrower's creditworthiness;
 - Investors often base their decisions about whether to buy a bond based on a company's credit rating; and
- (1) Countries with higher credit ratings are more likely to attract bond buyers in the form of foreign capital.¹⁸⁰⁰

Green bonds have generally been oversubscribed (especially if they have a high credit rating) showing investor appetite in integrating ESG factors into their investment strategies.¹⁸⁰¹ According to the Climate Bonds Initiative, investors benefit from funding green projects without additional risk, greater transparency into a bond's use of proceeds meeting their corporate commitments as signatories to the Principles for Responsible Investing (PRI) and reporting on climate impact of fixed income investments to their end asset owner.¹⁸⁰² International best practice¹⁸⁰³ has been drawn upon in the formulation of the Listing Rules.

The Kenya Green Bond Market Issuer's Guide¹⁸⁰⁴ provides detailed information and guidance on green bond issuance in Kenya.¹⁸⁰⁵ This Issuer's Guide serves as a tool and reference for comprehensive guidance on the issuance of Green Bonds.¹⁸⁰⁶ A

¹⁷⁹⁶ Nairobi Securities Exchange Limited (NSE).

¹⁷⁹⁷ CBI 2018 file:///C:/Users/p10180869/Downloads/green-bonds-annual-report.pdf.

¹⁷⁹⁸ NSE 2019 file:///C:/Users/p10180869/Downloads/green-bonds-guide-14.08.19.pdf.

¹⁷⁹⁹ Also see para 2.5.1 above.

¹⁸⁰⁰ Nguyen 2020 <https://www.investopedia.com/ask/answers/09/benefits-of-credit-ratings.asp>.

¹⁸⁰¹ CBI 2021 <https://www.climatebonds.net/market/investor-appetite>.

¹⁸⁰² CBI 2021 <https://www.climatebonds.net/market/investor-appetite>. Also see paras 2.5.6. and 3.5.

¹⁸⁰³ See para 3.6.4. Also see CBI 2018 file:///C:/Users/p10180869/Downloads/green-bonds-annual-report.pdf 10.

¹⁸⁰⁴ NSE 2019 file:///C:/Users/p10180869/Downloads/green-bonds-guide-14.08.19.pdf.

¹⁸⁰⁵ NSE 2019 file:///C:/Users/p10180869/Downloads/green-bonds-guide-14.08.19.pdf 16.

¹⁸⁰⁶ NSE 2019 file:///C:/Users/p10180869/Downloads/green-bonds-guide-14.08.19.pdf 16.

definitional overview of green bonds is provided in the Guide and the distinctions between other sustainability orientated bonds are provided.¹⁸⁰⁷ The four pillars of the GBP¹⁸⁰⁸ and the guidance of the Climate Bonds Standard¹⁸⁰⁹ form the core of the guidelines.¹⁸¹⁰ An issuance process with an overarching goal of financing green projects is outlined in the guidelines which provide for the pre-issuance and post issuance phases of the green bond.¹⁸¹¹

In the pre-issuance phase of a green bond, the issuer defines their green bond framework and appoints an Independent Verifier.¹⁸¹² Verifiers are appointed by the issuer of the green bond, to carry out a pre-issuance review and confirm to investors, the Exchange and Authority that the Bond is classified as green pursuant to the Green Guidelines and Standards.¹⁸¹³ The Independent Verifier must be an entity specialising in assessing the framework of the Green Bond's environmental objectives, with sufficient environmental, financial and market specific expertise to perform a comprehensive assessment of the use of proceeds.¹⁸¹⁴ The issuer is obligated to notify the investors in the Information Memorandum of the appointment of the Verifier.¹⁸¹⁵ The Verifier allows for credibility and transparency of the information detailed by the Issuer of the green bond as well as permitting investors to raise any objections that they may have about the appointment of such Verifier.¹⁸¹⁶ By appointing an independent Verifier the issuer increases the confidence of the investors in the credentials of the project.¹⁸¹⁷ The qualifications of the Verifier are set

¹⁸⁰⁷ NSE 2019 file:///C:/Users/p10180869/Downloads/green-bonds-guide-14.08.19.pdf 5.

¹⁸⁰⁸ See paras 2.4 and 3.7 above.

¹⁸⁰⁹ See para 2.4 above.

¹⁸¹⁰ NSE 2019 file:///C:/Users/p10180869/Downloads/green-bonds-guide-14.08.19.pdf 11.

¹⁸¹¹ NSE 2019 file:///C:/Users/p10180869/Downloads/green-bonds-guide-14.08.19.pdf 6.

¹⁸¹² NSE date unknown <https://www.nse.co.ke/regulatory-framework/regulatory-framework/rules.html> section 2.13.1. Also see paras 2.5.6.2/3.6.4.

¹⁸¹³ NSE date unknown <https://www.nse.co.ke/regulatory-framework/regulatory-framework/rules.html> section 2.13.1 19.

¹⁸¹⁴ NSE date unknown <https://www.nse.co.ke/regulatory-framework/regulatory-framework/rules.html> section 2.13.4.

¹⁸¹⁵ NSE date unknown <https://www.nse.co.ke/regulatory-framework/regulatory-framework/rules.html> section 2.14.

¹⁸¹⁶ NSE date unknown <https://www.nse.co.ke/regulatory-framework/regulatory-framework/rules.html> section 2.13.1.

¹⁸¹⁷ NSE 2019 file:///C:/Users/p10180869/Downloads/green-bonds-guide-14.08.19.pdf.

out in section 2.13.4 of the NSE Listing Rules.¹⁸¹⁸ They are extensive and comprehensive to potentially cover any issues which may arise about independence of the Verifier.¹⁸¹⁹

The NSE, given the critical importance of the Verifier, provides for minimum standards which include demonstrated compliance with ICMA Guidelines for External Reviewers,¹⁸²⁰ or the accreditation under the Climate Standards and Certification Scheme,¹⁸²¹ or any industry body acceptable to the Exchange and the Authority.¹⁸²² The Verifier has the responsibility of confirming the authenticity of the green bond to the investors, the Exchange and the Authority and that the bond was classified as green pursuant to the Green Guidelines and Standards.¹⁸²³ Such report is known as an External Review which serves as an independent assessment on the green credentials of the bond.¹⁸²⁴ External Reviews for green bonds fall under one of two categories, either as Second Party Opinion or as an Assurance Report.¹⁸²⁵ The World Bank provides some guidance on some of the aspects of issuance which can also be referred to and are compatible with the Kenyan guidelines.¹⁸²⁶

¹⁸¹⁸ NSE date unknown <https://www.nse.co.ke/regulatory-framework/regulatory-framework/rules.html> section 2.13. 4.

¹⁸¹⁹ Nairobi Securities Exchange "The Kenya Green Bond Market Issuers Guide" 20.

¹⁸²⁰ See para 2.5.6.2 above.

¹⁸²¹ NSE date unknown <https://www.nse.co.ke/regulatory-framework/regulatory-framework/rules.html> section 2.13.4.

¹⁸²² NSE 2019 file:///C:/Users/p10180869/Downloads/green-bonds-guide-14.08.19.pdf 20.

¹⁸²³ See Nairobi Securities Exchange "Excerpt of the amendments to NSE Listing Rules to introduce Green Bonds in the Capital Market" section 2.13.1. Annex A of the Kenya Green Bond Market Issuer's Guide on page 26 contains the Green Guides and Standards. These mean and include:

1. Green Bond Principles, as may be amended, issued and governed by International Capital Markets Association;
2. Green Bonds Standards such as the Climate Bonds Standard, as may be amended, issued and governed by the Climate Bonds Initiative;
3. Government policies and guidelines such as the Kenya National Policy on Climate Change, National Policy on Climate Finance and Green Economy Strategy, among other Government policies; or
4. Any other standard acceptable to the Exchange and the Authority.

¹⁸²⁴ NSE 2019 file:///C:/Users/p10180869/Downloads/green-bonds-guide-14.08.19.pdf 20. Also see para 2.5.2 above.

¹⁸²⁵ NSE 2019 file:///C:/Users/p10180869/Downloads/green-bonds-guide-14.08.19.pdf 20.

¹⁸²⁶ The World Bank 2016 <http://documents1.worldbank.org/curated/en/246031536956395600/pdf/129937-WP-Green-Bond-Proceeds-Management-and-Reporting.pdf>. See para 3.5.

The credibility of the Verifier is significant in light of the 2008 financial crisis.¹⁸²⁷ The Verifier must be an entity specialising in assessing the framework of the green bond's environmental objectives, with sufficient environmental, financial and market specific expertise to perform comprehensive assessment of the use of proceeds.¹⁸²⁸ Verifiers are often from the accounting or auditors professions with valuable competencies in evaluation and critical analysis as well as being up to date with regulatory and industry changes.¹⁸²⁹ A very important aspect of the Verifier is their proximity to the Directors or the issuing party issuing the green bond, the Verifier must be far removed from the issuer and independent of the issuer, its directors, senior management and advisors.¹⁸³⁰ It is critical that the Verifier be compliant with the International Capital Markets Association's Guidelines for External Reviewers,¹⁸³¹ or accredited under the Climate Standards and Certification Scheme,¹⁸³² or any industry body acceptable to the Exchange and the Authority; with significant and appropriate expertise needed for providing independent reviews on green bonds.¹⁸³³ It is upon this level of transparency that investors will make their investment and in the mind of the author why green bonds could grow exponentially based on this critical independent evaluation.

Some key considerations to be made before the issuance of the bond are the currency of issuance which the bond is to be issued and paid out.¹⁸³⁴ Local currency issuance is not likely to cause volatility risk for the issuer during the repayment phase as

¹⁸²⁷ The 2008 financial crisis viewed as the worst financial crisis since the Great Depression has its roots in the mortgage/housing market in the United States. Many banks did not do their due diligence on their investment decisions, relying on speculative activity, which ultimately led to selling-off of shares and a near total collapse of the American Housing market. The collapse of Lehman Brothers, the fourth largest bank in the USA. Erkens, Hung and Matos 2012 *Journal of Corporate Finance* 392.

¹⁸²⁸ NSE date unknown <https://www.nse.co.ke/regulatory-framework/regulatory-framework/rules.html> section 2.13.4 (i). Also see para 2.5.6.2 above.

¹⁸²⁹ Bailey 2010 *IIARF* 5.

¹⁸³⁰ NSE date unknown <https://www.nse.co.ke/regulatory-framework/regulatory-framework/rules.html> section 2.13.4 (ii). History would have one reflecting on the Enron case in which this proximity became opaque! – Smith 2018 <http://large.stanford.edu/courses/2018/ph240/smith1/>.

¹⁸³¹ Also see 2.5.6.2 above.

¹⁸³² Also see 2.5.6.2 above.

¹⁸³³ NSE 2019 file:///C:/Users/p10180869/Downloads/green-bonds-guide-14.08.19.pdf section 2.13.4 (iii)-(iv).

¹⁸³⁴ The World Bank 2016 <http://documents1.worldbank.org/curated/en/246031536956395600/pdf/129937-WP-Green-Bond-Proceeds-Management-and-Reporting.pdf>.

compared to foreign currency fluctuations which may gravely affect the investment, especially when the underlying revenue stream is in local currency.¹⁸³⁵ The issuer should also consider investor diversification to broaden their investor base to attract capital. A working definition of how the project meets green bond eligibility criteria in other words the Use of Proceeds should be established and agreed upon.¹⁸³⁶ Kenya, similarly to other countries,¹⁸³⁷ fortunately has a green bond framework which issuers can follow for compliance purposes and project alignment can be done with specific environmental priority areas.¹⁸³⁸ The issuer must then put in place a project selection process for eligible projects, this is known as the Selection of Projects and Assets.¹⁸³⁹ Eligibility of the project is an internal process which the issuer decides on; it is essential to get buy-in from investors and other stakeholders.¹⁸⁴⁰ Eligible projects as per the NSE Rules may also be categorised according to those of the GBP, the Climate Bonds Taxonomy¹⁸⁴¹ and the National Policy on Finance¹⁸⁴² and other National Green Strategies and Policies.¹⁸⁴³

The Issuers Guide provides categories of Guidance on "qualifying green Assets" to assist Issuers with projects.¹⁸⁴⁴ These categories include, for example:

- Renewable energy;
- Green and climate smart infrastructure, including transport, water and waste management;
- Climate smart agriculture and forestry;

¹⁸³⁵ The World Bank 2016 <http://documents1.worldbank.org/curated/en/246031536956395600/pdf/129937-WP-Green-Bond-Proceeds-Management-and-Reporting.pdf>.

¹⁸³⁶ NSE 2019 file:///C:/Users/p10180869/Downloads/green-bonds-guide-14.08.19.pdf.

¹⁸³⁷ China and India - See para 3.6.2.

¹⁸³⁸ The World Bank 2016 <http://documents1.worldbank.org/curated/en/246031536956395600/pdf/129937-WP-Green-Bond-Proceeds-Management-and-Reporting.pdf>.

¹⁸³⁹ NSE 2019 file:///C:/Users/p10180869/Downloads/green-bonds-guide-14.08.19.pdf. Also see para 3.6.2.

¹⁸⁴⁰ The World Bank 2016 <http://documents1.worldbank.org/curated/en/246031536956395600/pdf/129937-WP-Green-Bond-Proceeds-Management-and-Reporting.pdf> 1.

¹⁸⁴¹ NSE 2019 file:///C:/Users/p10180869/Downloads/green-bonds-guide-14.08.19.pdf Annex B 27. Also available on the Climate Bonds Initiative website.

¹⁸⁴² NSE 2019 file:///C:/Users/p10180869/Downloads/green-bonds-guide-14.08.19.pdf Annex C 28.

¹⁸⁴³ Such as the Green Economy Strategy and Implementation Plan (GESIP). NSE 2019 file:///C:/Users/p10180869/Downloads/green-bonds-guide-14.08.19.pdf 13.

¹⁸⁴⁴ NSE 2019 file:///C:/Users/p10180869/Downloads/green-bonds-guide-14.08.19.pdf Annex C 28.

- Resource efficient manufacturing;
- Green real estate and green affordable housing;
- Sustainable tourism; and
- Sustainable coastal and marine resource management.¹⁸⁴⁵

Further details on qualifying as green may be required and such details are provided by the NSE in its Annexes to qualifying requirements.¹⁸⁴⁶ The CBI certification may be attained as confirmation of the green credentials.¹⁸⁴⁷ It should always be noted that certification is a higher standard likely to draw more investors because of the level of scrutiny.¹⁸⁴⁸

Accounts earmarked for the allocation of the proceeds must be set up and ring-fenced.¹⁸⁴⁹ These proceeds cannot be used or allocated to other projects or accounts.¹⁸⁵⁰ A reporting process as per stipulated time frame within the green bond framework is established.¹⁸⁵¹ A pre-issuance external review process is then implemented to assess the entirety of the green bond.¹⁸⁵² This is a fairly standard process very similar to other jurisdictions so as not to confuse issuers or investors. Calibration of the feedback can be useful for aligning the project to investor needs and issuers. Documentation of all internal processes must be kept and made available when so required.¹⁸⁵³

The Green Bond Framework of the issuer which must be based on the four pillars of the GBP,¹⁸⁵⁴ namely Use of Proceeds, Selection of Projects and Assets, Management of Proceeds and Reporting. The issuer has the opportunity to explain directly to investors why and how green bonds fit into their long-term vision or corporate

¹⁸⁴⁵ NSE 2019 file:///C:/Users/p10180869/Downloads/green-bonds-guide-14.08.19.pdf Annex C 28.

¹⁸⁴⁶ NSE date unknown <https://www.nse.co.ke/regulatory-framework/regulatory-framework/rules.html> section 2.13.

¹⁸⁴⁷ CBI 2020 https://www.climatebonds.net/files/files/CBI_Certification_Brochure_September_2020.pdf.

¹⁸⁴⁸ See paras 2.5.6.2 and 3.6.3.

¹⁸⁴⁹ NSE 2019 file:///C:/Users/p10180869/Downloads/green-bonds-guide-14.08.19.pdf 21.

¹⁸⁵⁰ NSE 2019 file:///C:/Users/p10180869/Downloads/green-bonds-guide-14.08.19.pdf 21.

¹⁸⁵¹ NSE 2019 file:///C:/Users/p10180869/Downloads/green-bonds-guide-14.08.19.pdf 22.

¹⁸⁵² NSE 2019 file:///C:/Users/p10180869/Downloads/green-bonds-guide-14.08.19.pdf 20.

¹⁸⁵³ NSE 2019 file:///C:/Users/p10180869/Downloads/green-bonds-guide-14.08.19.pdf 23.

¹⁸⁵⁴ See para 2.4.

strategy.¹⁸⁵⁵ The Issuers' Green Bond Framework is a physical document which is publicly available on the NSE website and available to the public.¹⁸⁵⁶

Investors are directly linked to the green project by means of the Reporting mechanism which forms part of the Green Bond Framework.¹⁸⁵⁷ According to the Continuing Obligations of the NSE Rules,¹⁸⁵⁸ the issuer has to provide to investors, the Authority and the Exchange a Green Bond report, annually, bi-annually or quarterly for the duration of the Green Bond, in line with standard reporting procedure for listed Fixed Income instruments as set out in the Capital Markets (Public Offers) (Listing and Disclosure) Regulations.¹⁸⁵⁹ Innovative companies have included these reports in their financial statements and websites.¹⁸⁶⁰ The Report entails on-going eligibility of projects and assets which provides for a brief description of the project(s), including the percentage of proceeds that have been allocated to different project types and to financing and refinancing.¹⁸⁶¹ Any material changes to the project should be detailed and any other changes that have materially affected eligibility should be highlighted.¹⁸⁶² In the case of the eligibility of the Nominated Projects and Assets,¹⁸⁶³ if the projects have been compromised, the Issuer should report on whether the proceeds have been re-allocated to new eligible projects.¹⁸⁶⁴

In terms of the balance of the unallocated proceeds section of the report, the issuer should report the total balance of the unallocated proceeds and how they are being held in accordance with the processes set up in the Management of Proceeds.¹⁸⁶⁵

¹⁸⁵⁵ NSE 2019 file:///C:/Users/p10180869/Downloads/green-bonds-guide-14.08.19.pdf 10.

¹⁸⁵⁶ NSE 2020 <https://www.nse.co.ke/products-services/debt-securities/the-green-bond.html>; NSE 2019 file:///C:/Users/p10180869/Downloads/green-bonds-guide-14.08.19.pdf.

¹⁸⁵⁷ NSE 2019 file:///C:/Users/p10180869/Downloads/green-bonds-guide-14.08.19.pdf 22.

¹⁸⁵⁸ NSE "Excerpt of the amendments to NSE Listing Rules to introduce Green bonds in the Capital Market" 4.

¹⁸⁵⁹ Legal Notice 60 of 3 May 2002, as amended. Cited as Capital Markets (Securities) (Public Offers, Listing and Disclosures) Regulations, 2002.

¹⁸⁶⁰ NSE date unknown <https://www.nse.co.ke/regulatory-framework/regulatory-framework/rules.html> 22.

¹⁸⁶¹ NSE 2019 file:///C:/Users/p10180869/Downloads/green-bonds-guide-14.08.19.pdf 23.

¹⁸⁶² NSE 2019 file:///C:/Users/p10180869/Downloads/green-bonds-guide-14.08.19.pdf 23.

¹⁸⁶³ CBI 2015 <https://www.climatebonds.net/standard/taxonomy>. Nominated Projects and Assets are eligible projects and physical assets, or loans made to finance physical assets, that comply with the Climate Bond Standard.

¹⁸⁶⁴ NSE 2019 file:///C:/Users/p10180869/Downloads/green-bonds-guide-14.08.19.pdf 23.

¹⁸⁶⁵ NSE 2019 file:///C:/Users/p10180869/Downloads/green-bonds-guide-14.08.19.pdf 21.

Confirmation that unallocated proceeds are not being used to fund carbon intensive projects should be included in the report.¹⁸⁶⁶ The projects may also report on Key Performance Indicators (KPIs) which may include the number of annual tonnes of abated CO₂, generated electricity in terms of Kw per hour, miles of transmission lines installed or number of hectares of restored forest land or what-ever other criteria may be agreed upon.¹⁸⁶⁷ The Independent Verifier again will check the authenticity of the Report and the green status of the green bond.¹⁸⁶⁸ Upon his/her satisfaction they will sign-off on the report by means of a letter which will include a statement from the Financial Auditor relating to the use of proceeds.¹⁸⁶⁹ In testing the veracity of the Report and compliance by the issuer, the NSE and CMA rules¹⁸⁷⁰ attach additional and mandatory requirements as additional reassurance to the investor that the Independent Verifier must audit the annual Green Bond report.¹⁸⁷¹ This is done by means of assessing the credentials of the bond and the eligibility of the internal procedures within the issuer.¹⁸⁷² This is necessary so that issuers of green bonds do not change midstream of issuance and fund fossil fuel projects or non-compliant projects because they feel they are more profitable.¹⁸⁷³ The Independent Verifier and Financial Auditor according to international best should be separate entities.¹⁸⁷⁴ In Kenya according to the KBA, KPMG¹⁸⁷⁵ is the selected Independent Verifier and PWC¹⁸⁷⁶ serves as the financial auditor.¹⁸⁷⁷ Whether these procedures are sufficient or not can only be tested over a period of time and consistent monitoring.

¹⁸⁶⁶ NSE 2019 file:///C:/Users/p10180869/Downloads/green-bonds-guide-14.08.19.pdf 23.

¹⁸⁶⁷ NSE 2019 file:///C:/Users/p10180869/Downloads/green-bonds-guide-14.08.19.pdf 23.

¹⁸⁶⁸ NSE 2019 file:///C:/Users/p10180869/Downloads/green-bonds-guide-14.08.19.pdf 23.

¹⁸⁶⁹ NSE 2019 file:///C:/Users/p10180869/Downloads/green-bonds-guide-14.08.19.pdf 23.

¹⁸⁷⁰ NSE Listing Rules 2.24 The annual report on use and management of proceeds shall be reviewed and signed off by the Verifier to confirm the green status of the bond. CMA 2019 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/Kenya-Policy-Guidance-Note-for-Green-Bonds-260219.pdf>. The annual report shall be reviewed and confirmed by the Independent Verifier.

¹⁸⁷¹ NSE 2019 file:///C:/Users/p10180869/Downloads/green-bonds-guide-14.08.19.pdf 23.

¹⁸⁷² NSE 2019 file:///C:/Users/p10180869/Downloads/green-bonds-guide-14.08.19.pdf 23.

¹⁸⁷³ NSE 2019 file:///C:/Users/p10180869/Downloads/green-bonds-guide-14.08.19.pdf 23.

¹⁸⁷⁴ NSE 2019 file:///C:/Users/p10180869/Downloads/green-bonds-guide-14.08.19.pdf 23.

¹⁸⁷⁵ KPMG provides accounting, consulting, tax and legal, financial advisory, and assurance services.

¹⁸⁷⁶ PWC specializes in providing clients with seamless Tax, Assurance and Advisory solutions.

¹⁸⁷⁷ Nairobi Securities Exchange "The Kenya Green Bond Market Issuers Guide" 23.

In the event of the green bond not meeting its green bond credentials, the NSE Listing Rules by an Issuer of a Green Bond,¹⁸⁷⁸ under section 3, by means of censure state that remedial action may be required of such actions, within an agreed time frame, in addition to any other required action as stated by the Authority.¹⁸⁷⁹ The Authority may take any action it deems fit in the interests of the investors.¹⁸⁸⁰ If the Independent Verifier does not perform its duties diligently, the Authority may take appropriate enforcement action as it deems fit in the form of penalties or revocation of license to be a Verifier.¹⁸⁸¹ Should the Issuer not remedy the raised concerns, the green label may be revoked and any tax-benefits¹⁸⁸² associated with the green label will cease.¹⁸⁸³ "Any tax-benefits associated with the green label will cease, resulting in reputational risk for the issuer" and it is therefore the view of the author that any tax-benefits accrued over the duration of the infringement should become liable to the issuer of the green bond. The Regulator has the authority to publicly reprimand the Issuer which could have significant reputational harm and any ability to issue another green bond.¹⁸⁸⁴

5.3.3 Preliminary observations

The Kenyan Green Bond Framework launched by the Capital Markets Authority and the listing of issued green bonds on the Nairobi Stock Exchange has stimulated the sustainable finance market and increased the available finance for green projects reducing vulnerability to environmental risks.¹⁸⁸⁵ These guidelines have provided Kenya with a platform to bridge the gap in environmental financing available to climatic impacts such as flooding and drought. Several listings have taken place on the NSE, from corporates to government issued green bonds that have generally all been oversubscribed showing investor confidence and interest in the green bonds.

¹⁸⁷⁸ NSE Listing Rules Section 3.1.

¹⁸⁷⁹ NSE Listing Rules 3.8. Authority refers to the Capital Markets Authority established under the *Capital Markets Act*, Cap 485A.

¹⁸⁸⁰ NSE 2019 file:///C:/Users/p10180869/Downloads/green-bonds-guide-14.08.19.pdf 25.

¹⁸⁸¹ NSE 2019 file:///C:/Users/p10180869/Downloads/green-bonds-guide-14.08.19.pdf 25.

¹⁸⁸² NSE 2019 file:///C:/Users/p10180869/Downloads/green-bonds-guide-14.08.19.pdf 25

¹⁸⁸³ NSE 2019 file:///C:/Users/p10180869/Downloads/green-bonds-guide-14.08.19.pdf 25.

¹⁸⁸⁴ NSE 2019 file:///C:/Users/p10180869/Downloads/green-bonds-guide-14.08.19.pdf 25.

¹⁸⁸⁵ Green Bonds Programme Kenya Annual Report 2017-18 5.

Green bonds align with the overall strategy of "a low carbon, resource efficient, equitable and inclusive socio-economic transformation" under GESIP. The green bond framework in Kenya has been formed under a multi-stakeholder collaborative process in which the Central Bank of Kenya, Kenya Bankers Association (KBA), Nairobi Securities Exchange (NSE), Climate bonds Initiative (CBI), Financial Sector Deepening (FSD) Africa and the Dutch Development Bank (FMO) were involved.¹⁸⁸⁶ Tax exemptions have been submitted to the National Treasury as a way of growing the market as well as creating continuous technical support for potential green bond issuance, and the development of a pipeline of green bond issuers.¹⁸⁸⁷ The programme has in general been able to achieve developing interest and building consensus in catalysing the market for green bonds.¹⁸⁸⁸ The adoption of strong and regulatory listing rules provides clarity for green bond listing requirements in Kenya and the incorporation of international guidelines such as the GBP and the Climate Bonds Standard have provided international best practice.

The next paragraph considers the position in the United Kingdom.

5.4 United Kingdom (UK)

The UK climate change legal framework will be briefly discussed to investigate how its climate change mitigation strategy has been implemented and if it provides for green bonds or factors in green finance or sustainable finance as part of its mitigation. The UK was still part of the European Union at the time of writing, but it has made its intentions known that it will be going through with the tenets of Brexit on 1 January 2021.¹⁸⁸⁹ However, in the meantime the UK is still bound by the EU Directives.¹⁸⁹⁰ The UK has set ambitious targets in the reduction of carbon emissions alongside various market reforms in electricity regulation. An analysis of these reforms and the investments made to divest from carbon emissions will be contextualised in relation

¹⁸⁸⁶ Green Bonds Programme Kenya Annual Report 2017-18 4.

¹⁸⁸⁷ Green Bonds Programme Kenya Annual Report 2017-18 5 and 7.

¹⁸⁸⁸ Green Bonds Programme Kenya Annual Report 2017-18 12.

¹⁸⁸⁹ Baynes, Forrest and Osborne *The Independent*.

¹⁸⁹⁰ Due to the scope of the study and Brexit, the EU will not be discussed in detail.

to decarbonising the electricity grid. The green bond framework in the UK has largely been market driven and the government response to this instrument has not been as responsive as the market would have anticipated especially since the UK was the first country to put into law a net zero carbon emissions target for 2050.

5.4.1 Climate change legal framework-mandate for climate change mitigation

The UK is the home of the Industrial Revolution and was often derided in the 1980s as "the dirty man of Europe".¹⁸⁹¹ A report, the Stern Review,¹⁸⁹² predicted that inaction towards climate change:

...would cost the global economy between 5 percent and 20 percent of gross domestic product (GDP) in the absence of positive action, compared to a cost of about 1 percent of GDP if action is taken to stabilize atmospheric levels of carbon dioxide at 550ppm by 2050.¹⁸⁹³

Stern's review made two major contributions: that, for all the continuing uncertainties, the consequences of inaction are too dire to contemplate; and that in order to assure credibility, the UK needed to adopt reductions targets.¹⁸⁹⁴ This Review was "a turning point in the climate change debate" and changed private and public sector opinion to one in which climate change became a financial problem and not one merely for the environmentalists.¹⁸⁹⁵ The UK took further notice of the IPCC's Fourth Assessment Report in this debate and confirmed that anthropogenic climate change is real.¹⁸⁹⁶

The UK committed that the duty to ensure that the net UK carbon account for 2050 should be 60 percent lower than its 1990 baseline.¹⁸⁹⁷ This percentage was increased

¹⁸⁹¹ Burns and Carter 2018 *French Journal of British Studies* 1-17.

¹⁸⁹² Stern 2006 <https://www.lse.ac.uk/granthaminstitute/publication/the-economics-of-climate-change-the-stern-review/>.

¹⁸⁹³ Waite 2007 *Natural Resources and Environment* 50-52.

¹⁸⁹⁴ Stallworthy 2009 *Modern LR* 412-436.

¹⁸⁹⁵ Weeks 2017 <https://www.productivity.govt.nz/research/r-and-d-grants-4/> 5.

¹⁸⁹⁶ Weeks 2017 <https://www.productivity.govt.nz/research/r-and-d-grants-4/> 5.

¹⁸⁹⁷ Weeks 2017 <https://www.productivity.govt.nz/research/r-and-d-grants-4/> 6.

in 2008.¹⁸⁹⁸ In order to give effect to the UK's commitment towards their international obligations, they drafted an Act to provide a domestic framework in this regard.¹⁸⁹⁹

The *Climate Change Act* of 2008 was the first in the world and it became law in November 2008.¹⁹⁰⁰ This Act is now a model for legislation in other jurisdictions, setting an international standard and is a product of multiple factors coming together such as the consensus between political parties and strong economic conditions at the time.¹⁹⁰¹

Some key components of the Act are a statutory long-term emissions target, statutory five-year carbon budgets, continual adaptation planning, an independent advisory body and a mandatory progress monitoring and an accountability mechanism.¹⁹⁰² This duty based-framework is intended to provide coherence for directing the UK climate change policy.¹⁹⁰³ Broadly, though not stated as its purpose, the purpose may be said to be a realignment of the economy, alignment of investment decisions with climate change and civil society towards a low carbon trajectory.¹⁹⁰⁴ These stand out

¹⁸⁹⁸ Chapter 27 of *Climate Change Act*, 2008 increased the percentage to 80% - Part 1(1), and the discussion below. Also see Burns and Carter 2018 French Journal of British Studies 1-17. The target for 2050 (1) It is the duty of the Secretary of State to ensure that the UK carbon account for the year 2050 is at least 80% lower than the 1990 baseline.

¹⁸⁹⁹ Waite 2007 *Natural Resources and Environment* 50-52.

¹⁹⁰⁰ Chapter 27 of *Climate Change Act*, 2008.

¹⁹⁰¹ Weeks 2017 <https://www.productivity.govt.nz/research/r-and-d-grants-4/>. Also see Akina, Fankhauser and Finnegan 2020 *Climate Policy* who indicate that that most of the respondents they approached were satisfied that the Act provides a strong framework for climate change. Some respondents however were uncertain whether it would prevent government from retracting on the targets.

¹⁹⁰² The key elements of the Act are described in the long title:
"An Act to set target for the year 2050 for the reduction of targeted greenhouse gas emissions; to provide for a system of carbon budgeting; to establish a Committee on Climate Change; to confer powers to establish trading schemes for the purpose of limiting greenhouse gas emissions or encouraging activities that reduce such emissions or remove greenhouse gas from the atmosphere; to make provision about adaptation to climate change; to confer powers to make schemes for providing financial incentives to produce less domestic waste and to recycle more of what is produced; to make provision about the collection of household waste; to confer powers to make provision about charging for single use carrier bags; to amend provisions of the *Energy Act* 2004 about renewable transport fuel obligations; to make provisions about carbon emissions reduction targets; to make other provision about climate change; and for the connected purpose". See also Fankhauser, Averchenkova and Finnegan "10 years of the UK Climate Change Act".

¹⁹⁰³ Stallworthy 2009 *Modern LR* 412-436.

¹⁹⁰⁴ Stallworthy 2009 *Modern LR* 412-436.

features make the Act a particularly innovative framework law and serves as a powerful guide for climate change following the *Paris Agreement*.¹⁹⁰⁵

In the *Climate Change Act* Part 1(1), the Secretary of State has clear and unqualified legal duties, to ensure that the UK reaches its obligations in relation to its net carbon account by 2050.¹⁹⁰⁶ These include the enforcement of the net UK carbon account for the year 2050 is at least 80 per cent lower than the 1990 baseline.¹⁹⁰⁷ The enforceability of the duties has caused much debate but the existence of the duties elevates their status and have greater ramifications that go beyond any formal sanctions.¹⁹⁰⁸ Generally, given the low political salience of climate change, there is always the prospect of successive Secretaries of State to set insufficiently ambitious carbon budgets which allow for deviation from the 2050 target, endangering the sustainability of the Act itself.¹⁹⁰⁹ Practice, however, has seen the discretionary powers of the Secretary being constrained.¹⁹¹⁰ Long-term emission reduction targets and the review of strategies and policies centre the government on a "carbon accounting" regime intended to focus it on reaching the intended targets with defined goals.¹⁹¹¹ The UK has to bring all greenhouse gas emissions to net zero by 2050 as amended in 2019 when Part 1(1) was revised to now state "it is the duty of the Secretary of State to ensure that the net UK carbon account for the year 2050 is at least 100 % lower than the 1990 baseline".¹⁹¹² The current carbon budgets cover the period between 2008-2032.¹⁹¹³

The 2050 carbon target can be amended subject to certain constraints and only in certain circumstances and procedures under the powers conferred on the Secretary of State.¹⁹¹⁴ Such constraints have significantly shifted post the Brexit announcement and it will be interesting to see how the law is amended to accommodate this. The

¹⁹⁰⁵ Fankhauser, Averchenkova and Finnegan "10 years of the UK Climate Change Act" 2.

¹⁹⁰⁶ *Climate Change Act* Part 1(1).

¹⁹⁰⁷ *Climate Change Act* Part 1(1).

¹⁹⁰⁸ Weeks 2017 <https://www.productivity.govt.nz/research/r-and-d-grants-4/>.

¹⁹⁰⁹ Church 2015 *UCLJLJ* 109-134.

¹⁹¹⁰ Church 2015 *UCLJLJ* 109-134.

¹⁹¹¹ Yawson, Armah and Adu 2020 <https://doi-org.nwulib.nwu.ac.za/10.1007/s42452-020-2444-6>.

¹⁹¹² Part 1(1) as amended in 2019 of the Act.

¹⁹¹³ Part 1(4) of the Act; Weeks 2017 <https://www.productivity.govt.nz/research/r-and-d-grants-4/>.

¹⁹¹⁴ Weeks 2017 <https://www.productivity.govt.nz/research/r-and-d-grants-4/>.

Secretary is afforded wide discretionary powers in setting the carbon budgets "taking into account" certain considerations stated in terms of the Act.¹⁹¹⁵ Section 6(2)(2) states that the Secretary may only exercise such power if it appears to the Secretary of State that there have been significant developments in (a) scientific knowledge about climate change, or (b) European or international law or policy that make it appropriate to do so.¹⁹¹⁶ It must be noted that whilst the Secretary must consider the aforementioned factors, it, however, does not translate into a duty to give particular weight to any one consideration over another.¹⁹¹⁷ The carbon budgets are set with the view of meeting the 2050 targets and there is a suggestion that the 2050 target is at least one of the Secretary of State's objectives and is therefore not his primary purpose.¹⁹¹⁸

This process in reality entails approval by the House of Commons and the House of Lords and cannot be unilaterally amended by the Secretary of State.¹⁹¹⁹ The "affirmative resolution procedure" requires the democratic process of approval between the two houses which is an important step towards public accountability.¹⁹²⁰ The normal bounds of illegality apply as to the discretionary powers of the Secretary of State as to what considerations should be factored and therefore, such considerations may not depart too far from the intention of the Act as a whole.¹⁹²¹ The carbon budgets according to section 8(2)(a) must be set with a view to meeting the target in section 1 (the target for 2050), and (b) the requirements of section 5 (requirements as to level of carbon budgets), and complying with the European and international obligations of the United Kingdom.¹⁹²²

There are specific matters that the government must take into consideration when making decisions about carbon budgets. Section 10(2)(a)-(i) sets these out, but the government may take into consideration other matters as they are not limited to

¹⁹¹⁵ Church 2015 *UCLJLJ* 109-134.

¹⁹¹⁶ *Climate Change Act* 2008, s 2(a)-(b).

¹⁹¹⁷ Church 2015 *UCLJLJ* 109-134.

¹⁹¹⁸ Church 2015 *UCLJLJ* 109-134.

¹⁹¹⁹ Weeks 2017 <https://www.productivity.govt.nz/research/r-and-d-grants-4/>.

¹⁹²⁰ Church 2015 *UCLJLJ* 109-134. (S 91 of the Act).

¹⁹²¹ Church 2015 *UCLJLJ* 109-134.

¹⁹²² *Climate Change Act* 2008, s 8(a)-(b).

those stated in the Act.¹⁹²³ The amendment of carbon budgets, whilst permissible, is arduous and involves the Secretary of State, consultation with the Committee on Climate Change and the representatives of the other national authorities.¹⁹²⁴ The aviation and shipping industries, as previously stated (originally excluded on the basis that they fell outside of British control) are treated differently somewhat, as estimations for these industries will be made by the Secretary of State in accordance with international best practice and using reasonable methods the Secretary considers appropriate.¹⁹²⁵

The set emission targets are to be achieved by means of collaboration between government policy and proposals as well as the recommendations of the independent expert Committee on Climate Change (CCC).¹⁹²⁶ Part of the Act's intention was binding future governments to emission targets progressively through the series of five yearly targets enroute to the ultimate 2050 carbon target.¹⁹²⁷ Politicians and the political parties they represent are constrained by their political cycles, the environment is not. Investors could plan confidently, content that governments of the future would not arbitrarily make changes to the climate commitments made by the Act, they were assured of making low carbon investments into the various technologies "safe in the knowledge that governments would sustain the battle against climate change in the long term".¹⁹²⁸

Domestic emission trading schemes can be introduced in terms of the Act by means of secondary legislation which has given rise to the introduction of the Carbon Reduction Commitment Energy Efficiency Scheme.¹⁹²⁹ Measures on biofuels and the

¹⁹²³ *Climate Change Act 2008*, s 1(2)(a-i).

¹⁹²⁴ *Climate Change Act 2008*, s 22(a-b).

¹⁹²⁵ *Climate Change Act 2008*, s 10(3)-(4).

¹⁹²⁶ Lockwood 2013 *Global Environmental Change* 1339.

¹⁹²⁷ Lockwood 2013 *Global Environmental Change* 1339.

¹⁹²⁸ Lockwood 2013 *Global Environmental Change* 1343.

¹⁹²⁹ Part 3(44) of the Act; GRI date unknown <https://climate-laws.org/cclow/geographies/united-kingdom/laws/climate-change-act-34405aa9-396e-4a78-a662-20cad9696365>.

piloting of financial incentives for household waste have largely been as a result of the Act which provides ease and speed of secondary legislation because of the Act.¹⁹³⁰

The CCC is an independent body that acts in an advisory capacity to the Secretary with a budget of £3,7 million, however, it does not have budgetary independence.¹⁹³¹

The CCC is established as a result of section 32 and Schedule 1 of the Act.¹⁹³² The CCC is made up of members who have technical experience or knowledge in a list of criteria set out in the schedule under section 3.¹⁹³³ It consists of a high profile chairman appointed by the national authorities and a deputy chairman who is appointed after due consultation with the chairman.¹⁹³⁴ It is also comprised of members who are appointed by national authorities and is made up of not less than five and not more than eight such members.¹⁹³⁵ Members hold office in accordance with their terms of appointment.¹⁹³⁶ This implies that they do not have fixed terms of office. Members may resign by means of giving written notice to the Secretary of State and may be removed by the national authorities who appointed them.¹⁹³⁷ Members who have ceased to be members may be reappointed, there are no reasons

¹⁹³⁰ Part 5(72) of the Act. For example, the Act required that by 2012 Aviation and Shipping should be included in the net carbon account and if this was not done an explanation to Parliament why not would be needed – see in this regard Nachmany *et al* 2015 https://www.lse.ac.uk/GranthamInstitute/wp-content/uploads/2015/05/Global_climate_legislation_study_20151.pdf. Aviation and Shipping Emissions were deferred as a result of uncertainty over the international framework for reducing aviation emissions in those industries. Net zero targets now exclude Aviation and Shipping - GRI date unknown <https://climate-laws.org/cclow/geographies/united-kingdom/laws/climate-change-act-34405aa9-396e-4a78-a662-20cad9696365>. The Shipping Industry may find itself forced to make drastic changes towards GHG mitigation because of the Poseidon Principles which limit financial lending to shipping companies that fail to uphold new environmental standards - LSE 2019 https://docs.londonstockexchange.com/sites/default/files/documents/lseg_green_finance_issuer_guide.pdf.

¹⁹³¹ *Climate Change Act* 2008, s 33; Fankhauser, Averchenkova and Finnegan “10 years of the UK Climate Change Act” 3.

¹⁹³² Section 32 and Schedule 1 of the *Climate Change Act* 2008.

¹⁹³³ Schedule s 3 (a)–(i).

¹⁹³⁴ Schedule s 2.

¹⁹³⁵ Schedule s 1(b).

¹⁹³⁶ Schedule s 3.

¹⁹³⁷ This removal may be for several reasons which include absence from meetings without permission from the Committee for a period of 6 months or more, a member who has become bankrupt or made arrangements with creditors, whose estate has become sequestrated in Scotland or who, under Scots law, has made a composition or arrangement with, or granted a trust deed for, creditors, or who in the opinion of the national authorities is otherwise unable or unfit to carry out their duties of that member. See Schedule s 5(a)(b)(c)(d).

provided for reappointment.¹⁹³⁸ The Chief Executive of the Committee as an employee of the Committee, is appointed by the Committee but must be approved by the national authorities.¹⁹³⁹

The core functions of the CCC are to advise in the main on carbon budgets, as discussed above, and report as per statutory requirements on the UK's progress in meeting its climate change targets.¹⁹⁴⁰ These statutory duties include to recommend to Parliament appropriate emissions reduction targets, to advise the government on the risks of and opportunities from climate change and to evaluate its National Adaptation Programme.¹⁹⁴¹ The CCC should further monitor and assess progress on reducing emissions and on climate resilience and provide on-demand advice to the UK Government and the devolved administrations of Northern Ireland, Scotland and Wales.¹⁹⁴² Reasons for advice given must be provided and copies sent to the national authorities may also be published in such manner the CCC considers appropriate.¹⁹⁴³ The Reports of the CCC stating their views on progress made towards meeting the carbon budgets are presented before Parliament and the devolved legislatures every year.¹⁹⁴⁴

The CCC is a well-respected and trusted institution by stakeholders to the extent that the opposition bench is often first to use its findings for greater ambition.¹⁹⁴⁵ Its reports are highly regarded and carry "immense authority".¹⁹⁴⁶ The Parliamentary Select Committee report on the fifth carbon budgets stated that the CCC "produces very professional, highly robust and scientifically relevant reports".¹⁹⁴⁷ Part of its

¹⁹³⁸ Schedule s 7(a)(b).

¹⁹³⁹ Schedule s 11(1).

¹⁹⁴⁰ Section 34.

¹⁹⁴¹ Refer to UK's National Adaptation Reports – will find them on UNFCCC website.

¹⁹⁴² Averchenkova, Fankhauser and Finnegan 2018 *Policy Brief* 3.

¹⁹⁴³ Section 34(3).

¹⁹⁴⁴ Section 36(1).

¹⁹⁴⁵ Averchenkova, Fankhauser and Finnegan 2018 *Policy Brief* 7. The Climate Change Committee is an "independent, statutory body established under the *Climate Change Act* 2008 and its purpose is to advise the UK and devolved governments on emissions targets and to report to Parliament on progress made in reducing greenhouse gas emissions and preparing for and adapting to the impacts of climate change". The above authors analysed the Hansard 2021 [https://www.parliament.gov.za/hansard?sorts\[date\]=-1](https://www.parliament.gov.za/hansard?sorts[date]=-1).

¹⁹⁴⁶ Averchenkova, Fankhauser and Finnegan 2018 *Policy Brief* 7.

¹⁹⁴⁷ Averchenkova, Fankhauser and Finnegan 2018 *Policy Brief* 7.

success over the years has been that a material difference was made "in the way in which climate policy is conducted in terms of objectives (the statutory carbon targets), process (impact on parliamentary debate) and substance (influencing new laws on energy, infrastructure, housing and water)".¹⁹⁴⁸ Years of meticulous planning are at risk if the CCC continues to suffer from budgetary constraints impacting on its ability to deliver the ambitious work programme.¹⁹⁴⁹ Governments around the world are known for underfunding institutions as a way of undermining their authority, it is hoped that this is not the intention in this case. The CCC has managed to nurture extensive positive engagement with various stakeholders through a combination of rigorous analysis of the climate change facts and the budgetary cuts hamper this progress made over several years.¹⁹⁵⁰ The UK Government is faced with the possibility of judiciary review if the policy advice given by the CCC is not adhered to.¹⁹⁵¹ In recent times policy recommendations have been overlooked, creating a gap between climate targets and the policies to deliver them.¹⁹⁵²

The UK government has acknowledged a policy gap exists in meeting the fourth carbon budget (2023-2027) and this is arguably a breach of the Act.¹⁹⁵³ This breaches section 13(1) of the Act which requires the Secretary of State to prepare "such proposals and policies as the Secretary of State considers will enable the carbon budgets that have been set under this Act to be met".¹⁹⁵⁴ Section 14 requires the Secretary of State to report to Parliament on "proposals and policies for meeting the carbon budgets for the current and future budgetary periods ...".¹⁹⁵⁵ In the latest report by the government to the CCC's Report published in June 2020, the government published a report entitled "The Government Response to the Committee on Climate Change's 2020 Progress Report to Parliament". In its in-depth report the government recognises the need to meet the size of its net zero and carbon budgets

¹⁹⁴⁸ Averchenkova, Fankhauser and Finnegan 2018 *Policy Brief* 7.

¹⁹⁴⁹ Averchenkova, Fankhauser and Finnegan 2018 *Policy Brief* 7.

¹⁹⁵⁰ Averchenkova, Fankhauser and Finnegan 2018 *Policy Brief* 7.

¹⁹⁵¹ Averchenkova, Fankhauser and Finnegan 2018 *Policy Brief* 7.

¹⁹⁵² Averchenkova, Fankhauser and Finnegan 2018 *Policy Brief* 4.

¹⁹⁵³ Averchenkova, Fankhauser and Finnegan 2018 *Policy Brief* 13.

¹⁹⁵⁴ *Climate Change Act* 2008, s 13(1).

¹⁹⁵⁵ *Climate Change Act* 2008, s 14(1).

ambitions.¹⁹⁵⁶ A Net Zero Strategy is to be followed by the government in meeting its carbon reduction obligations. The Strategy sets out the Government's vision for "transitioning to a net zero economy, making the most of new growth and employment opportunities across the UK".¹⁹⁵⁷

Recommendations made by the CCC in the form of priorities for policy development from the latest progress report are listed as:

- (1) Enabling mature low carbon energy sources (e.g. onshore wind) to come to market;
- (2) Defining how energy efficiency improvements shall be financed and delivered;
- (3) Increasing adoption of low carbon heat, which includes policies to overcome behavioural barriers;
- (4) Extending vehicle efficiency targets through the 2020s, coupled with policies to increase use of electric vehicles; and
- (5) In order to decarbonise effectively by 2050, the CCC has called for all new investments from 2020 onwards to be low carbon, excluding back-up and balancing plants. From 2035 this will apply to investments in transport.¹⁹⁵⁸

The Act has been successful in driving action and compliance with procedural and substantive obligations.¹⁹⁵⁹ Post Brexit things may change and may have to change in meeting the targets but the Act is domestic legislation and therefore "stands irrespective of the UK's membership to the EU".¹⁹⁶⁰ Political machinations in the form of Brexit have overshadowed the national governments' fifth carbon budget plan called the "Clean Growth Path" and may require the government to "reassess the

¹⁹⁵⁶ CCC (UK) 2020 <https://www.theccc.org.uk/publication/reducing-uk-emissions-2020-progress-report-to-parliament/> 5.

¹⁹⁵⁷ *Climate Change Act* 2008 (2050 Target Amendment) Order 2019. Also see CCC (UK) 2020 <https://www.theccc.org.uk/publication/reducing-uk-emissions-2020-progress-report-to-parliament/> 6.

¹⁹⁵⁸ GRI date unknown <https://climate-laws.org/cclow/geographies/united-kingdom/laws/climate-change-act-34405aa9-396e-4a78-a662-20cad9696365>.

¹⁹⁵⁹ Averchenkova, Fankhauser and Finnegan 2018 *Policy Brief* 22.

¹⁹⁶⁰ Averchenkova, Fankhauser and Finnegan 2018 *Policy Brief* 25.

most cost-effective means of reaching the UK's climate change targets post-Brexit".¹⁹⁶¹

The Sixth Carbon Budget¹⁹⁶² makes recommendations of 78 per cent reductions in carbon emissions between 2033-37, the budget should be more expansive and cover all GHG emissions.¹⁹⁶³ A more aggressive and urgent approach towards emissions should be adopted for performance based on actual UK emissions (net of removals), this is recommended by the CCC.¹⁹⁶⁴

Green bonds provide an opportunity for the government to meet its targets through lower costs in capital by raising significant amounts on the capital markets in-light-of Brexit where the UK will have "go it alone" in many regards. The nature of green bonds as long-term instruments will provide for investors who are environmentally conscious and willing to invest in the governments long term view of climate change.¹⁹⁶⁵

5.4.2 Existing green bond regulatory framework

The UK governments uptake on green bonds has been slow and lethargic despite it becoming the first country to put into law a net zero carbon emissions target for 2050.¹⁹⁶⁶ The CBI which is a London based NGO and one of the most vocal proponents of green bonds is based in the UK, but this has not encouraged the UK government to drive green bonds but rather the market has responded and risen to the occasion. There are, however, more euro and dollar denominated green bonds on the market than sterling. Investors have blamed the British government for lack of activity despite there being an appetite for such investments.¹⁹⁶⁷

¹⁹⁶¹ Averchenkova, Fankhauser and Finnegan 2018 *Policy Brief* 25.

¹⁹⁶² CCC 2020 <https://www.theccc.org.uk/wp-content/uploads/2020/12/The-Sixth-Carbon-Budget-The-UKs-path-to-Net-Zero.pdf>.

¹⁹⁶³ CCC 2020 <https://www.theccc.org.uk/wp-content/uploads/2020/12/The-Sixth-Carbon-Budget-The-UKs-path-to-Net-Zero.pdf> 15.

¹⁹⁶⁴ CCC 2020 <https://www.theccc.org.uk/wp-content/uploads/2020/12/The-Sixth-Carbon-Budget-The-UKs-path-to-Net-Zero.pdf> 15.

¹⁹⁶⁵ See para 5.4.3.

¹⁹⁶⁶ Asgari 2019 <https://www.ft.com/content/3ac7a46c-b916-11e9-96bd-8e884d3ea203>.

¹⁹⁶⁷ Asgari 2019 <https://www.ft.com/content/3ac7a46c-b916-11e9-96bd-8e884d3ea203>.

The United Kingdom Stock Exchange has issued green bond listing requirements that require second opinion verification. In the UK, Use of Proceeds are mainly allocated to low carbon infrastructure.

The London Stock Exchange Group (LSEG) is at the heart of the global financial system with an unparalleled track record in innovative financial products and the largest investor base of any Stock Market.¹⁹⁶⁸ It is the most diversified and liquid market infrastructure group with the expertise to support the transition to a sustainable low carbon economy.¹⁹⁶⁹ The expertise within the LSEG have enabled a sophisticated and innovative data set of ESG tools broadly used for communication with investors in their investment decision making.¹⁹⁷⁰ The UK's capital market led by the LSE, which has a 300 year history, is home to one of the most internationally oriented capital markets, with the most choice securities and structures providing access to financing and investment opportunities for banks, companies and investors.¹⁹⁷¹ This presents an opportunity for alignment of the LSEG with Article 2 of the *Paris Agreement* which requires all financial flows to be low carbon.

Green bonds were first listed on the LSE in 2015 under the dedicated Green Bond Segment, which is part of the main exchange.¹⁹⁷² A green bond is defined by the Sustainable Bond Market (SBM) as:

... any type of bond instrument where the proceeds will be exclusively applied to finance or re-finance, in part or in full, new and/or existing eligible Green Projects as per the relevant international standards used.¹⁹⁷³

¹⁹⁶⁸ LSE 2019 https://docs.londonstockexchange.com/sites/default/files/documents/lseg_green_finance_issuer_guide.pdf.

¹⁹⁶⁹ LSE 2019 https://docs.londonstockexchange.com/sites/default/files/documents/lseg_green_finance_issuer_guide.pdf.

¹⁹⁷⁰ LSE 2019 https://docs.londonstockexchange.com/sites/default/files/documents/lseg_green_finance_issuer_guide.pdf.

¹⁹⁷¹ UK 2018 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/703816/green-finance-taskforce-accelerating-green-finance-report.pdf.

¹⁹⁷² LSE 2019 https://docs.londonstockexchange.com/sites/default/files/documents/lseg_green_finance_issuer_guide.pdf.

¹⁹⁷³ LSE 2019 https://www.lseg.com/sites/default/files/content/documents/Sustainable%20Bond%20Market_Application_Terms%20and%20Conditions%20%28February%202020%29.pdf.

This green bond segment was driven by global policy such as the *Paris Agreement* and the UN Sustainable Goals as a response to climate change and the growth of sustainable finance.¹⁹⁷⁴ This segment within the main exchange of the LSE set specific listing requirements which were aligned with independent standards and verification.¹⁹⁷⁵ The SBM:

... is a label applied across various segments of the London Stock Exchange's existing primary markets in order to promote visibility of sustainable debt finance instruments.¹⁹⁷⁶

The SBM was set up as a comprehensive sustainable finance platform with the intention of mitigating climate risk, helping issuers meet investor demands for greater and more consistent disclosures as well as increasing visibility of and access to the burgeoning sustainable finance market.¹⁹⁷⁷ The dedicated SBM in the last five years alone, has been able raise in excess of £27 billion in 13 currencies from 49 issuers in 18 countries since it was launched.¹⁹⁷⁸ Investors on the SBM are offered greater visibility on the nature of financial instruments available, who the issuers are, and the use of proceeds for the capital raised with the accompanying requisite documentation.¹⁹⁷⁹ Approximately £4 trillion of globally listed companies which represent 6 per cent of the market are described as green businesses with diversified portfolios, supported by major pension fund groups and banks.¹⁹⁸⁰ The benefits of the SBM listing are:

¹⁹⁷⁴ LSE 2019 https://docs.londonstockexchange.com/sites/default/files/documents/lseg_green_finance_issuer_guide.pdf.

¹⁹⁷⁵ LSE 2019 https://docs.londonstockexchange.com/sites/default/files/documents/lseg_green_finance_issuer_guide.pdf.

¹⁹⁷⁶ SBM 2019 https://www.lseg.com/sites/default/files/content/documents/Sustainable_Bond_Market_Factsheet_FINAL%20%2811_10_2019%29.pdf.

¹⁹⁷⁷ SBM 2019 https://www.lseg.com/sites/default/files/content/documents/Sustainable_Bond_Market_Factsheet_FINAL%20%2811_10_2019%29.pdf.

¹⁹⁷⁸ LSE 2019 https://docs.londonstockexchange.com/sites/default/files/documents/lseg_green_finance_issuer_guide.pdf.

¹⁹⁷⁹ SBM 2019 https://www.lseg.com/sites/default/files/content/documents/Sustainable_Bond_Market_Factsheet_FINAL%20%2811_10_2019%29.pdf.

¹⁹⁸⁰ LSE 2019 https://docs.londonstockexchange.com/sites/default/files/documents/lseg_green_finance_issuer_guide.pdf.

- Breadth of offering: the SBM covers a range of asset classes backed by expertise from data and post-trade services. SBM helps deliver the broadest sustainable finance platform to issuers and investors.
- World class peer group: bonds on the SBM are displayed alongside other prominent bonds such as those from supra-nationals, corporates, sovereigns, local governments and municipalities, many of which are "world firsts" in terms of geography or structure, including the first certified green bonds out of the UK, China, India, the Middle East, Canada and first sovereign green bonds from Asia Pacific and the Americas.
- International investor base: the SBM is the major global market, is the most sophisticated and long-term oriented base for sustainable finance offering a uniquely deep pool of international liquidity. The London Stock Exchange commits to continual engagement with investors in order to support markets with innovative and effective policies.
- Enhanced visibility and international standards: international standards are applied to enhance investor confidence in the core principals such as the level of disclosure related to their sustainability frameworks and reporting. External reviews sustainability frameworks and annual sustainability reports are a key component of transparency on the market. Annual reporting is critical.
- Flexibility: movement between the fixed income primary markets is permissible. Secondary market trading functionalities are provided so that issuers can offer investors appropriate liquidity and price discovery mechanisms.
- LSEG offering and insights: guidance and support is provided to issuers. MTS Europe the leading electronic platform for public sector debt can be traded on this platform. Various other global indexes and analytics providers are available for support.¹⁹⁸¹

The listing of green bonds on the SBM is conditional based on the following rigorous set of requirements:

¹⁹⁸¹ SBM 2019 https://www.lseg.com/sites/default/files/content/documents/Sustainable_Bond_Market_Factsheet_FINAL%20%2811_10_2019%29.pdf.

- Submission of a completed SBM Declaration and Application Form as from 1 January 2020 which includes
 - Description of the classification of the securities being admitted: Use of Proceeds certified (green) or issuer-level classified;
 - Disclosure of mandatory sustainability related documents as applicable, such as an independent External Review; and
 - Acknowledgement and commitment to ongoing post-issuance reporting obligations.¹⁹⁸²

The admission to the SBM is conditional based on all other primary market listing requirements being met, in addition to any SBM eligibility criteria.¹⁹⁸³ The Declaration Form includes:

- Classification of securities: the SBM offers issuers to classify their bonds as either "use of proceeds certified green". The responsibility of the relevant classification criteria is with the issuer and must declare that they comply accordingly.
- Disclosure of mandatory sustainability related documents as applicable, such as an Independent External Review - relevant supporting documentation is critical to submission.
- Acknowledgement and commitment to post-issuance reporting obligations - the post-issuance requirements are mandatory for all issuers on the SBM.¹⁹⁸⁴

The Eligibility Criteria and Guidance section of the SMB Factsheet provides an in-depth analysis on the criterion and the on-going obligations of the issuer used for the various categories of compliance of the green bonds.¹⁹⁸⁵ The first category is the Use of Proceeds Classification in which green bonds are distinguished based on independently verified frameworks and use of proceeds, as well as complying with

¹⁹⁸² SBM 2019 https://www.lseg.com/sites/default/files/content/documents/Sustainable_Bond_Market_Factsheet_FINAL%20%2811_10_2019%29.pdf.

¹⁹⁸³ SBM 2019 https://www.lseg.com/sites/default/files/content/documents/Sustainable_Bond_Market_Factsheet_FINAL%20%2811_10_2019%29.pdf.

¹⁹⁸⁴ SBM 2019 https://www.lseg.com/sites/default/files/content/documents/Sustainable_Bond_Market_Factsheet_FINAL%20%2811_10_2019%29.pdf.

¹⁹⁸⁵ SBM 2019 https://www.lseg.com/sites/default/files/content/documents/Sustainable_Bond_Market_Factsheet_FINAL%20%2811_10_2019%29.pdf.

the further requirements of the Green Bond Principles.¹⁹⁸⁶ Issued green bonds will be required to provide the LSE with an acceptable external review which assesses the security's adherence to eligible relevant international principles.¹⁹⁸⁷ Annual post-issuance reporting is also required for continued eligibility purposes.¹⁹⁸⁸ The Exchange has the power to review eligibility to the Use of Proceeds Classification segments without formal external review in instances where there is sufficient supporting material to indicate that this is appropriate.¹⁹⁸⁹ The LSE has sole discretion on eligibility decisions to the SBM.¹⁹⁹⁰ The Exchange reserves the right to add bonds to the Use of Proceeds Classification segments without external verification in instances where the following criteria are met:

- To the best of the Exchange's ability to determine, adherence to ICMA GBP;
- Commitment to the ongoing reporting of Use of Proceeds; and
- Experience of previously having issued Green bonds with certification.¹⁹⁹¹

This process will be applied to ensure transparency, where bonds do not have external verification.¹⁹⁹²

The External Review Guidance process must be verifiable and proven and such proof must be provided by all issuers to the Exchange.¹⁹⁹³ Verification must be from an independent third party reviewer at the time of the application before any green security can be admitted to the SBM, unless discretionary eligibility has been

¹⁹⁸⁶ SBM 2019 https://www.lseg.com/sites/default/files/content/documents/Sustainable_Bond_Market_Factsheet_FINAL%20%2811_10_2019%29.pdf.

¹⁹⁸⁷ SBM 2019 https://www.lseg.com/sites/default/files/content/documents/Sustainable_Bond_Market_Factsheet_FINAL%20%2811_10_2019%29.pdf.

¹⁹⁸⁸ SBM 2019 https://www.lseg.com/sites/default/files/content/documents/Sustainable_Bond_Market_Factsheet_FINAL%20%2811_10_2019%29.pdf.

¹⁹⁸⁹ SBM 2019 https://www.lseg.com/sites/default/files/content/documents/Sustainable_Bond_Market_Factsheet_FINAL%20%2811_10_2019%29.pdf.

¹⁹⁹⁰ SBM 2019 https://www.lseg.com/sites/default/files/content/documents/Sustainable_Bond_Market_Factsheet_FINAL%20%2811_10_2019%29.pdf.

¹⁹⁹¹ SBM 2019 https://www.lseg.com/sites/default/files/content/documents/Sustainable_Bond_Market_Factsheet_FINAL%20%2811_10_2019%29.pdf.

¹⁹⁹² SBM 2019 https://www.lseg.com/sites/default/files/content/documents/Sustainable_Bond_Market_Factsheet_FINAL%20%2811_10_2019%29.pdf.

¹⁹⁹³ SBM 2019 https://www.lseg.com/sites/default/files/content/documents/Sustainable_Bond_Market_Factsheet_FINAL%20%2811_10_2019%29.pdf.

confirmed and granted by the LSE.¹⁹⁹⁴ Such scrutiny provides the investor with enhanced confidence of the market standards and provides additional visibility for those issuers admitting securities on the SBM.¹⁹⁹⁵ The third-party reviewer in terms of the LSE must be:

- (1) Independent of the entity issuing the bond;
- (2) Remunerated in a way that prevents any conflicts of interests arising; and
- (3) Specialised entity in assessing the framework of bonds' environmental or social objectives and providing an assessment of the use of proceeds.¹⁹⁹⁶

This assessment is done through:

- affiliation with relevant and widely recognized industry bodies; or
- significant and appropriate previous experience in providing external review on green bonds.¹⁹⁹⁷

External reviews by third parties can be performed in the following ways:

1. Consultant's Review/Second Opinion;
2. Verification;
3. Third Party certification; and
4. Green Bond Rating (separate from an issuer's overall ESG rating).¹⁹⁹⁸

To ensure further transparency the Exchange can reserve the right to request additional information related to Use of Proceeds if the information provided is deemed to be insufficient or unsatisfactory for any reason.¹⁹⁹⁹

¹⁹⁹⁴ SBM 2019 https://www.lseg.com/sites/default/files/content/documents/Sustainable_Bond_Market_Factsheet_FINAL%20%2811_10_2019%29.pdf.

¹⁹⁹⁵ SBM 2019 https://www.lseg.com/sites/default/files/content/documents/Sustainable_Bond_Market_Factsheet_FINAL%20%2811_10_2019%29.pdf.

¹⁹⁹⁶ SBM 2019 https://www.lseg.com/sites/default/files/content/documents/Sustainable_Bond_Market_Factsheet_FINAL%20%2811_10_2019%29.pdf.

¹⁹⁹⁷ SBM 2019 https://www.lseg.com/sites/default/files/content/documents/Sustainable_Bond_Market_Factsheet_FINAL%20%2811_10_2019%29.pdf.

¹⁹⁹⁸ SBM 2019 https://www.lseg.com/sites/default/files/content/documents/Sustainable_Bond_Market_Factsheet_FINAL%20%2811_10_2019%29.pdf.

¹⁹⁹⁹ SBM 2019 https://www.lseg.com/sites/default/files/content/documents/Sustainable_Bond_Market_Factsheet_FINAL%20%2811_10_2019%29.pdf.

The LSE approved a list of applicable international standards and regional principles and guidelines for green bonds accepted for eligibility to the SBM are the:²⁰⁰⁰

- (1) ICMA Green Bond Principles;
- (2) CBI Certification;
- (3) Sustainability Bond Guidelines;
- (4) EU Green Bond Standard;
- (5) PBoC'S Green Bond Guidelines;
- (6) NDRC Guidelines (China);
- (7) ASEAN Green Bond Standards; and
- (8) Indonesian Green Bond Regulation.²⁰⁰¹

As standards evolve and the market grows globally the Exchange reserves the right to update the list from time to time and include other international standards to be considered on a case by case basis.²⁰⁰² The developments the UK inspired the International Standardization Organisation (ISO) to seek comments on a proposed ISO Standard for Green Finance.²⁰⁰³ The listing requirements of the UK, as well as the ISO Standard may provide lessons for South Africa's regulation of green bonds.²⁰⁰⁴

Eligibility decisions to the SBM are however made at the discretion of the LSE.²⁰⁰⁵ Reporting on green bonds as per the requirements of the SBM is compulsory on admission to the SBM and through-out the life of the bond in order to maintain eligibility.²⁰⁰⁶ Supporting documentation to this effect must be submitted to the SBM

²⁰⁰⁰ See para 3.6.

²⁰⁰¹ SBM 2019 https://www.lseg.com/sites/default/files/content/documents/Sustainable_Bond_Market_Factsheet_FINAL%20%2811_10_2019%29.pdf.

²⁰⁰² SBM 2019 https://www.lseg.com/sites/default/files/content/documents/Sustainable_Bond_Market_Factsheet_FINAL%20%2811_10_2019%29.pdf.

²⁰⁰³ ISO 2020 <https://standards.iteh.ai/catalog/standards/iso/0dd4f08d-ec19-4250-a44e-45107f3385df/iso-dis-14030-4>.

²⁰⁰⁴ See paras 3.6.5 and 6.3.

²⁰⁰⁵ SBM 2019 https://www.lseg.com/sites/default/files/content/documents/Sustainable_Bond_Market_Factsheet_FINAL%20%2811_10_2019%29.pdf.

²⁰⁰⁶ SBM 2019 https://www.lseg.com/sites/default/files/content/documents/Sustainable_Bond_Market_Factsheet_FINAL%20%2811_10_2019%29.pdf.

on an annual basis.²⁰⁰⁷ The ICMA reporting standards may be followed by the issuer for guidance.²⁰⁰⁸ Issuers that do not comply with reporting on an annual basis post-issuance, may have their bonds moved to a segment of the SBM labelled "pending reporting".²⁰⁰⁹ Should the issuer fail to report for a period longer than 24 months the Exchange reserves the right to withdraw such securities from the SBM.²⁰¹⁰

5.4.3 Preliminary observations

The Stern Review was a turning point for the UK climate change policy, which ultimately led to the first model *Climate Change Act* which was to influence many other jurisdictions to formulate their own *Climate Change Acts*. This formalised the UK's approach towards mitigation of carbon emissions. The long-term 2050 target created a focused approach towards various policy initiatives aimed at reducing carbon emissions creating carbon budgets that lead towards a carbon emissions reductions pathway. This transition towards a low carbon economy provided a legally binding target for the UK to meet its net zero target in 2050. The five-year carbon budgets are a response towards meeting the net zero target. The annual reports of the CCC served as an accountability framework in which the government had to respond to the submitted reports by the CCC which gave guidance and data on achieving the objectives of the *Climate Change Act*.

Various initiatives were taken up by the UK government in decarbonising the economy, one of which was the acceptance of caps on carbon emissions over the four successive carbon periods which corresponded with a 34 per cent reduction in UK GHG emissions by 2030 and a 50 per cent reduction in emissions by 2025, relative to 1990 levels. The EMR legislation in 2010 represented a radical change in the architecture of the UK electricity markets in that its three main objectives were to

²⁰⁰⁷ SBM 2019 https://www.lseg.com/sites/default/files/content/documents/Sustainable_Bond_Market_Factsheet_FINAL%20%2811_10_2019%29.pdf.

²⁰⁰⁸ SBM 2019 https://www.lseg.com/sites/default/files/content/documents/Sustainable_Bond_Market_Factsheet_FINAL%20%2811_10_2019%29.pdf.

²⁰⁰⁹ LSE 2019 https://www.lseg.com/sites/default/files/content/documents/Sustainable%20Bond%20Market_Application_Terms%20and%20Conditions%20%28February%202020%29.pdf.

²⁰¹⁰ LSE 2019 https://www.lseg.com/sites/default/files/content/documents/Sustainable%20Bond%20Market_Application_Terms%20and%20Conditions%20%28February%202020%29.pdf.

keep the lights on, to keep energy bills affordable and to decarbonize energy generation. This planned approach and constant accountability now meant there was a real possibility of meeting the broader objectives of a decarbonized energy grid and economy.

The added pressure in a shortfall of 18.3 GW of electricity meant that the UK had to seek alternative energy solutions. The 2013 *Energy Act* repositioned the energy sector by incentivising the market with £110bn to replace ageing infrastructure with low carbon and renewable energy sources to ensure energy security whilst also ensuring that the UK met its international obligations in terms of reductions in GHG emissions. The EMR provided the necessary tools for delivering the objectives of the *Energy Act*. The EMR's Objectives were aligned to those of the government's energy and climate change goals. Investing into the energy sector was critical in terms of the EMR's objectives in that sufficient investment into sustainable low-carbon technologies were required to put the UK on a path consistent with the EU 2020 renewables targets and the longer-term target to reduce carbon emissions by at least 80% of 1990 levels by 2050.

The LSE being at the heart of the global financial system with the largest investor stock market base in the world, was one of the first Stock Markets to have a dedicated Green Bond Segment and defined a green bond. Driven by global policy such as the *Paris Agreement* and the UN Sustainable Goals the segment was able to set specific listing requirements aligned with independent standards and verification. The LSE Green Bond Segment has been one of the more successful listings of green bonds globally with over £27 billion in 13 currencies from 49 issuers in 18 countries from inception being launched. Green bonds listed on the LSE are able to leverage the platform where over £4 trillion of globally listed companies representing 6 per cent of the market are described as green businesses with diversified portfolios and supported by major pension fund groups and banks. Green bond success in the UK has largely been more as a result of market intervention than policy driven. The LSE as a stock market has provided the exposure, expertise and data driven experience which investors have latched onto for their listing of green bonds. Some major "world firsts" in terms of certified green bonds from major economies have listed their green

bonds on the LSE taking advantage of the exposure and investor appetite. An important feature of the green bonds in the UK has been the level of flexibility permissible for green bonds. Movement between the fixed income primary markets is permissible allowing for secondary market trading which provides investors with appropriate liquidity and price discovery mechanisms. In an evolving market the LSE constantly requires on going verification and eligibility of listed green bonds as it has sole discretion of eligibility requirements. This allows for greater transparency of listed green bonds.

5.5 Conclusion

The three foreign jurisdictions. Nigeria, Kenya and the United Kingdom, were investigated in this chapter, to understand how climate change policies and legislation can provide for the growth of the green bond sector. Nigeria and Kenya provide an African perspective and approaches in the implementation of green bonds as a response to climatic impacts in those countries in the context of Africa being the most severely affected continent by climate change as stated in the IPCC's Fourth Assessment Report. The position is exacerbated by weak macro-economic issues and a lack of robust adaptation and mitigation strategies in place. The UK provides a European perspective and the scale of listed green bonds on the largest stock exchange in Europe.

Nigeria as the largest economy on the continent, is heavily dependent on fossil fuels and has a more difficult task of dealing with climate change mitigation and adaptation strategies unlike Kenya which is a more agrarian economy with considerable renewable energy resources primarily in the form of geothermal energy. The United Kingdom as the largest of the three economies was much bolder in adopting a *Climate Change Act* in 2008. This Act has served as a model Act for various other jurisdictions, Kenya eight years later, adopted the *Climate Change Act, 2016* which was the first climate change-dedicated legislation in Africa. Nigeria is yet to adopt a *Climate Change Act*, though in 2010 a *Climate Change Commission Bill* was drafted which envisaged mainstreaming and addressing of salient issues connected with climate

change as well as providing an institutional and legal framework for climate change governance. It is yet to be signed into law.

Nigeria and Kenya both have constitutional provisions for environmental protection and environmental rights. In Nigeria, the constitutional provisions for environmental policy have been made through section 20 of the *Constitution of the Federal Republic of Nigeria* of 1999 as amended in 2011. The aim of section 20 of this Constitution is to provide for a healthy environment for Nigerian citizens similarly to section 24 of the South African Constitution. However, this section is limited in terms of how courts can enforce or interpret legal matters which may arise, and this limitation is extended to citizens who may seek the courts' action. The *Constitution of Kenya*, 2010 sets out the legal foundation for climate change action through, for example Articles 10 and 42. Article 10 sets out national values and principles of governance, such as sustainable development, devolution of government and public participation whilst Article 42 makes provisions for the right to a clean and healthy environment, which also includes the right to have the right to the protection of the environment for the benefit of present and future generations through legislative and other measures.

Kenya is not a Federal State like Nigeria, however, the concept of devolution in the administrative process in Kenya is very significant and goes beyond mere decentralisation of government services. Nigeria, which is a Federal State, allows for different States within Nigeria to make legislative pronouncements in protecting the environment as was done by Lagos State which enacted the *National Environmental Standards and Regulations Enforcement Act*, 2007; Akwa Ibom State, has the *Environmental Protection and Waste Management Agency Law*, Cap 47 of Akwa Ibom State of Nigeria 2000. As previously stated, the Kenyan counties have jurisdiction as set out in the Fourth Schedule (Part 2) of the Constitution in the delivery and funding allocation of the *Climate Change Act*. Kenya has adopted a mainstreaming approach of climate change into sector functions. This includes the change "functions and budgets" of the relevant state departments and entities; Country Integrated Development Plan and Country Sectoral Plans; the integration of climate change risk and vulnerability assessments into all forms of assessment (e.g., EIAs); and into the national education curriculum.

The Nigerian Executive adopted the National Climate Change Policy and Response Strategy (NCCPRS) with the aim of responding to climate change induced challenges. This strategic policy intends to "foster a low carbon economy, high growth economic development path by building a resilient society through the set targets".²⁰¹¹ NASREA was created with the purpose of enforcing compliance of all environmental laws, guidelines, policies, standards and regulations in Nigeria as well as enforcing all international agreements, protocols, conventions and treaties on the environment which Nigeria is a signatory to. The National Policy on the Environment provides a more holistic approach to the management of the environment and natural resources by adequately ensuring for their protection and sustainable development.

Kenya has a National Climate Change Council established in terms of section 5 of the *Climate Change Act*, chaired by the President of Kenya and the Deputy President serves as its deputy vice-chairperson and at the core of the Council's functions is the provision of an overarching mechanism for the coordination of climate change initiatives and actions. Section 6(e) of the Act provides that the Council shall provide policy direction on research and training on climate change including on the collation dissemination of information relating to climate change to the national and county governments, the public and other stakeholders. In the UK, the Secretary of State is placed with clear and unqualified legal duties, in ensuring that the net UK carbon account for the year 2050 is at least 80 per cent lower than the 1990 baseline. The expert Committee on Climate Change assists with collaboration between government policy and proposals by making recommendations on achieving the set target reduction targets. Funding and set emission reduction targets are critical to both countries in achieving the long-term goals of emission reductions in the various sectors within their economies. It is to be noted that committees empowered with specific powers help drive the processes forward and give guidance.

The active attempts of reforming the energy sector in Nigeria as a result of the vulnerability of the sector to climate change has not resulted in an increase in energy supply. Nigeria still has a low generating capacity relative to its installed capacity.

²⁰¹¹ LSE 2015 <https://www.lse.ac.uk/GranthamInstitute/wp-content/uploads/2015/05/NIGERIA.pdf>.

The *Energy Commission Act* of 1979 which aimed at monitoring Nigeria's excessive energy carbon footprint into the atmosphere as a result of the generation and transmission of electricity and extraction of oil and gas has not been successful in mitigating these emissions. Section 3 of the Act, which set up a technical advisory committee made up of the Director-General of the Commission and professionals representing the government ministries was tasked with the responsibility of strategic planning and co-ordination of the national policies in the field of energy in all its ramifications. Inefficiency of the implementation of the suggestions made by the Commission has only meant that some of the suggestions have been carried out such as the gathering of information, research and development, energy policy and planning activities, however, not producing any energy laws whilst others have been discarded. The 2007 Report by the World Energy Council (WEC) which suggested that Nigeria had not been up to the challenge of meeting the criteria of the "3 A's" of "accessibility", "acceptability" and "availability" of energy supply to its population, was an indictment of Nigerian efforts to reduce carbon emissions as well as diversifying away from a heavily dependent fossil fuel economy. This report found that Nigerian policy on GHG emissions from the energy sector were not enough to curtail more emissions. As earlier stated, the drafted policies were too narrow, focused on short termism, and did not provide clear indications of government strategies on cleaner energy investment. The WEC report showed that no single policy or measure can provide the whole solution as all available measures have their own drawbacks and advantages. Renewable energy implementation has been sporadic and uncoordinated.

Emissions reductions have been identified by all three countries as a strategy for mitigating against GHG and decarbonising the economies towards low carbon pathways and meeting the nationally determined contributions to the *Paris Agreement*. In Nigeria the government has over the years drawn up several renewable energy policies to drive adoption and implementation of renewable energy. However, "renewable energy power projects have largely been off-grid, as the market has not yet developed to the point here several developers can feed the power

generated from renewable energy sources into the grid".²⁰¹² In the UK the Committee on Climate Change has been tasked with reviewing the renewable energy target and increasing the level of ambition for renewable energy use. The intention of the UK government was to support an increase through the European Union emission reduction target to 30 per cent by 2020. Many targets may have been missed as a result of the COVID19 global crisis. Renewable energy is a necessary diversification of the energy market in-light-of the oil shocks of the 1970s, fossil fuels are depleting resources and renewables offer a broadening of the energy resource base. In the UK and Kenya there is a concerted effort to promote the use of renewable energy. The relevant Minister in Kenya is mandated to promote its use, research and development at a national level. In the UK the renewable energy policy framework is made up of three key components which are, financial support for renewables, unblocking barriers to delivery and developing emerging technologies.²⁰¹³

The Nigerian Green Bond Framework developed and published in 2017 is in alignment with the UNFCCC, and the emissions reduction targets outlined in the *Paris Agreement*. Collaboration between the Ministry of Environment and the DMO has enhanced the growth of the green bond framework in Nigeria. Nigeria became the first country to issue a sovereign green bond on the continent. Nigeria's Green Bond Guidelines are an adaptation of the GBP which form part of the global standard. Similarly, green bonds in Kenya are coordinated under the Sustainable Finance Initiative, which is sanctioned by the National Treasury, Central Bank of Kenya as well as the Capital Markets Authority. In Kenya green bonds are regulated by the *Capital Markets Act* Chapter 485A as amended in 2019 and the Policy Guidance Note (PGN) 2019 which guides the operational regulatory environment on green bonds in Kenya. Both countries therefore have a formal regulatory environment for the introduction of green bonds.

²⁰¹² Amodu 2019 <https://www.lexology.com/library/detail.aspx?g=f96f56e5-c90b-4eef-8728-b618044430d0>.

²⁰¹³ UK 2009 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/47871/25-nat-ren-energy-action-plan.pdf 6.

In the UK green bonds are listed on the LSE according to the listing requirements that use second opinion verification under the dedicated Green Bond Segment. The segment like other green segments was driven by global policy such as the *Paris Agreement* and the UN Sustainable Goals as a response to climate change and the growth of sustainable finance. The Sustainable Bond Market set up as a comprehensive sustainable finance platform has been the platform upon which green bonds have been listed in the UK market. This is one of the largest green bond listing platforms in the world and has been able to raise in excess of £27 billion in 13 currencies from 49 issuers in 18 countries since it was launched. Market intervention has been the primary driver of green bonds in the UK and not government policy.

Chapter 6

Conclusion and recommendations

6.1 Conclusion

The aim of the study was to determine how green bonds should be regulated and governed in South Africa in order for these instruments to facilitate environmentally responsible investment in the country's energy sector, taking learning points from foreign jurisdictions.

A green bond for the purpose of this study was defined as:

A socially responsible investment, which meets the objectives of the socially conscious investor, is a financial mechanism or a debt instrument under which its use of proceeds is structured for the purpose of financing environmental, social and governance issues as well as financing low carbon infrastructure that meet the Green Bond Principles. Such bonds provide for a financial return and is payable over an agreed schedule and its proceeds are constantly evaluated subject to environmental social governance principles within the African and South African context.

There are several drivers for green bonds pertaining to their use. This research identified the following as factors, namely climate change, climate change mitigation, climate finance, environmental and social consciousness, sustainable development, and sustainable energy and environmental social governance (ESG).²⁰¹⁴

6.1.1 Climate change

The study indicated that climate change has a huge impact not only on temperature increase but also on the climate itself.²⁰¹⁵ Various studies indicated that Africa will be the most vulnerable to the impacts of climate change, exacerbated by weak macro-economic issues and a lack of robust adaptation and mitigation strategies in place.²⁰¹⁶

²⁰¹⁴ See para 2.5.

²⁰¹⁵ See para 2.5.2.

²⁰¹⁶ See paras 2.5.2, 3.3.2.

The complexity of international climate change law is evidenced by some of the agreements and mechanisms in place that have been as a result of protracted negotiations of which some can be said to be still on-going.²⁰¹⁷ The UNFCCC was formed as a result of the notable increase in GHG emissions and was adopted in 1992.²⁰¹⁸ The UNFCCC's aim is the prevention of the dangerous effects of anthropogenic climate change and its main objective being the stabilisation of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous human interference.²⁰¹⁹ Several principles inform the UNFCCC as per article 3; including the precautionary principle, the sustainable development principle and the common but differentiated responsibilities and respective capabilities. Mitigation has been the primary focus of the UNFCCC, more so than adaptation though a combination of both would be more effective.²⁰²⁰ Article 1(2) of the UNFCCC provides the definition for climate change whilst article 4.2(a) and 4.2(b) identify the developed or developing countries as either Annex I countries or Annex II countries and their commitments to mitigation of climate change measures under their national policies and corresponding measures.²⁰²¹ In terms of the IPCC these measures are technological processes that contribute to mitigation in the form of renewable energy technologies, waste minimisation processes, and public commuting practices.²⁰²² The UNFCCC acknowledges wider cooperation is required for an effective and appropriate response in accordance with the CBDR-RC principle.²⁰²³

In 1997, the *Kyoto Protocol* operationalised the objectives of the UNFCCC which entered into force in 2005 by quantifying the commitments under its article 10.²⁰²⁴ The *Kyoto Protocol* committed industrialised countries to binding targets and economies in transition to limit and reduce GHG emissions in accordance with agreed

²⁰¹⁷ See para 3.2.2.

²⁰¹⁸ See paras 2.5.2, 3.2.1, 3.2.2.

²⁰¹⁹ See para 3.2.2. Bodansky "The history of the global climate change regime" 31 stated that international climate change law embodies legal standards, but these standards are more general, than commitments and are without specific actions.

²⁰²⁰ See para 2.5.3.

²⁰²¹ See para 2.5.3.

²⁰²² See para 3.2.2.

²⁰²³ See para 2.5.3.

²⁰²⁴ See para 3.2.3.

targets.²⁰²⁵ Article 2 importantly to this research sets out policies and measures which include further research in renewable energy, energy efficiency fiscal incentives and reduction in GHG from the energy sector.²⁰²⁶ The UNFCCC and *Kyoto Protocol*/address key international instruments through multi-lateral co-operation.²⁰²⁷

The *Paris Agreement* was a landmark agreement in 2015 in which a global response to the threat posed by climate change was achieved and this agreement required all parties to communicate ambitious GHG reduction targets in attaining the long-term global temperature.²⁰²⁸ The *Paris Agreement* identifies financial instruments, amongst others, as a focal area required to urgently create green economies of the future that are low carbon and resilient in nature.²⁰²⁹ This would require the transformation of the major sources of emissions, primarily the consumption of energy.²⁰³⁰ Adept financial instruments would be required for this transition from a carbon-based energy system to one that was low carbon and resilient.²⁰³¹ Market-based mitigation mechanisms and the promotion of renewable energy and energy efficiency are some of the other strategies implemented to deal with climate change.²⁰³²

South Africa, Nigeria, Kenya and the United Kingdom are signatories to the UNFCCC, *Kyoto Protocol* and the *Paris Agreement*. South Africa's approach to climate change historically has been through policies, strategies and regulations.²⁰³³ This lacklustre

²⁰²⁵ See para 3.2.3.

²⁰²⁶ See para 3.2.3.

²⁰²⁷ See para 3.4.

²⁰²⁸ See para 3.2.4. United Nations *Paris Agreement* a 2(a): "holding the increase in the global average temperature to well below 2° C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5° C above pre-industrial levels, recognizing that this would significantly reduce the risks of impacts of climate change". Also see Park 2018 *Stanford JIL* 3.

²⁰²⁹ See para 3.2.4.

²⁰³⁰ See para 3.2.4.

²⁰³¹ See para 3.2.4.

²⁰³² See para 4.2.6.

²⁰³³ See paras 4.2.2, 4.2.3 and 4.2.7. The South African National Development Plan made early recognition of climate change as integral in the allocation of national resources informed by the historical construct in which resources were exploited rather than conserved or managed in a sustainable manner. The *South African National Climate Change Response White Paper (White Paper)* (SA Government) date unknown https://www.gov.za/sites/default/files/gcis_document/

approach varied from resource depletion, the demise of apartheid to the rise of a new constitutional order.²⁰³⁴ The South African Constitution through section 24 provides a legal framework for climate change, which read together with section 7(2) of the Constitution provides an obligation on the state to promote the achievement of the environmental right.²⁰³⁵ Nigeria has similarly made provisions for environmental law and protection under section 20 of the *Constitution of the Federal Republic of Nigeria*, while Kenya provides for environmental protection in its 2010 Constitution under articles 10 and 42.

South Africa introduced a *Climate Change Bill*, 2018, as a reflection of South Africa's commitment towards the *Paris Agreement* and the actioning of South Africa's National Climate Change Response Policy.²⁰³⁶ The *Carbon Tax Act* 15 of 2019 was introduced with the aim of providing for the imposition of a tax on the carbon dioxide (CO₂) equivalent of GHG emissions, and to provide for matters connected therewith.²⁰³⁷ The tax imposed is set to incentivise the efficient use of energy and nudge the economy towards a more sustainable growth path. The *Taxation Laws Amendment Act* 17 of 2009 allowed for exemptions of certified emissions reductions in terms of section 12K and under section 12L for a special allowance for energy efficiency savings.²⁰³⁸ However, no specific mention is made of green bonds or other financial instruments as measures that could assist in addressing climate change mitigation.

201409/nationalclimatechangeresponsewhitepaper0.pdf) espoused to making a fair contribution to the global effort to stabilise GHG concentrations in the atmosphere, against the challenges of "overriding priorities" of sustainable development, job creation, improved public and environmental health, poverty eradication and social inequality. The *White Paper* serves as a presentation of the government's vision for the effective climate change response and the long-term, just transition to a climate resilient and lower-carbon economy and society. Green bonds are not explicitly mentioned in the *White Paper* but the broad themes of sustainable development, mitigation, adaptation, low-carbon or "climate resilient" development and the use of economic instruments are echoed through-out the *White Paper*.

²⁰³⁴ See para 4.2.2.

²⁰³⁵ See para 4.2.2. NEMA in South Africa entrenches internationally accepted principles and gives effect to the environmental right as framework legislation - see para 4.2.5; Nel and du Plessis 2001 *SAJELP* 2.

²⁰³⁶ See para 4.2.3.

²⁰³⁷ See para 4.2.2.

²⁰³⁸ See para 5.4.1.

The UK was the first country to enact its *Climate Change Act* of 2008 and this Act has served as model legislation for other countries.²⁰³⁹ Kenya was the first African country to enact its *Climate Change Act* 11 of 2016.²⁰⁴⁰ Nigeria does not yet have legislation in this regard.²⁰⁴¹

The UK *Climate Change Act* 2008 addresses climate change through emissions reduction targets which have lowered emissions, particularly from the power sector.²⁰⁴² As the first legally binding Act to do so, and the first major economy to commit to "net zero" target, it set precedence for other countries to follow suit.²⁰⁴³ The Act made commitments of reducing GHG emissions by initially setting a target of 80 per cent by 2050, however that figure has now been revised to 100 per cent lower than the 1990 baseline as part of trying to achieve the net zero target.²⁰⁴⁴ Part 1(13) of the UK *Climate Change Act* whilst not directly providing for green bonds, does suggest that the Secretary of State must prepare proposals and policies that will enable the meeting of the carbon budgets as contribution towards sustainable development.²⁰⁴⁵ Green bonds as a financial instruments, it is suggested by the author can be proposed as contributing towards meeting the objectives of the carbon budgets. The Kenyan *Climate Change Act*, 2016 provides for climate change by mainstreaming climate change into strategic areas and into county and government functions. Climate finance forms an integral part of the Kenyan response to climate finance for mitigation and adaptation actions and interventions.²⁰⁴⁶ Kenya in the *Climate Change Act* sets to optimise the use of climate finance as a strategic tool for low carbon development strategies and develop other strategies in the coordination of building climate resilience to climate change whilst enhancing adaptivity.²⁰⁴⁷ Green bonds as climate finance tools have been developed in Kenya as part of its overall

²⁰³⁹ See para 5.4.1.

²⁰⁴⁰ See para 5.3.1.

²⁰⁴¹ See para 5.2.1.

²⁰⁴² See para 5.4.1.

²⁰⁴³ See para 5.4.1.

²⁰⁴⁴ See para 5.4.1.

²⁰⁴⁵ See para 5.4.1.

²⁰⁴⁶ See para 5.3.1.

²⁰⁴⁷ See para 5.3.1.

climate change mitigation and adaptation strategy.²⁰⁴⁸ Nigeria does not yet have a *Climate Change Act*, it has however developed other policies and legislation in addressing climate change.²⁰⁴⁹ The National Adaptation Strategy and Plan of Action on Climate Change for Nigeria (NASPA-CCN) aims to ensure that climate change adaptation is integrated into sustainable development strategies of the future as well as ensuring that adaptation measures are developed on a federal, state and local government level.²⁰⁵⁰ The National Climate Change Policy and Response Strategy (NCCPRS) was aimed at responding to climate change induced challenges. The *Climate Change Commission Bill* drafted in 2010 has been trapped in the Nigerian legislative process and is yet to become law. A Green Bond Framework has however been developed and published in Nigeria in 2017, with the intention of meeting some of Nigeria's international commitments under the UNFCCC.²⁰⁵¹

6.1.2 *Climate change mitigation*

The complexity of climate change in a developing country such as South Africa, which is the largest emitter on the continent, and where there are competing interests in the form of socio-economic needs and the environment has been compounded by high levels of uncertainty about its effects, the wide-spread socio-economic decay among poor marginalised urban and rural communities, lack of basic services and ill-health, the need for vigorous economic expansion and the country's concomitant reliance on fossil fuels and the need to protect many sensitive ecosystems, water resources and biodiversity.²⁰⁵² To effectively deal with the impacts of climate change, developing countries need to access the requisite technology and financing. Mitigation²⁰⁵³ strategies will require cheaper technologies and practices, much more

²⁰⁴⁸ See para 5.4.3.

²⁰⁴⁹ See para 5.2.1.

²⁰⁵⁰ See para 5.2.3.

²⁰⁵¹ See para 5.2.3.

²⁰⁵² Du Plessis and Kotzé 2014 *JAL* 146.

²⁰⁵³ Mitigation is a human intervention to reduce the sources or enhance the sinks of GHG. Climate change mitigation is defined by the UNFCCC as "Human intervention to reduce the sources or enhance the sinks of greenhouse gases (GHG). Interventions which reduce the sources of other substances which may contribute directly or indirectly to limiting climate change, including, for

efficient technologies in the conversion of their energy, low GHG-emitting technologies, carbon capture and storage and improvements in land-use change and forestry practices which will drive the reduction of GHG in the atmosphere. The UNFCCC²⁰⁵⁴ and decisions on climate change such as the binding obligations created by the *Kyoto Protocol* form the integral elements of the international climate change regime guided by its principles. The *Paris Agreement* contributes to the mitigation of climate change by the establishment of a mechanism to incorporate sustainable development and the reduction of GHG emissions through their NDCs.²⁰⁵⁵

Climate change mitigation involves the reduction of emissions from the harmful effects of GHG.²⁰⁵⁶ This is achieved in several ways such as the incorporation of renewable energy technologies in energy consumption, the efficient use of older equipment or the change in consumer behaviour. What is already apparent to scientists is that unchecked climate change is increasing as a result of human activity.²⁰⁵⁷ As a global phenomenon it requires international, regional and local cooperation. This will require equitable effort-sharing as a result of divergent contributions to the problem.²⁰⁵⁸ Delaying mitigation efforts is likely to increase mitigation costs, this is cost from a developing countries' perspective is linked to the technological options available.²⁰⁵⁹

South Africa is a major contributor to global GHG emissions, and is well aware that not only financial resources will be required but technical cooperation and technological transfer of domestic, regional and international finances will be

example, the reduction of particulate matter emissions that can directly alter the radiation balance (e.g., black carbon) or measures that control of carbon monoxide, nitrogen oxides, Volatile Organic Compounds and other pollutants that can alter the concentrations of tropo-spheric ozone which has an indirect on the climate" - IPCC 2014 https://www.ipcc.ch/site/assets/uploads/2018/02/AR5_SYR_FINAL_An_nexes.pdf 125. Whilst the IPCC provides the more scientific definition as "technological change and substitution that reduce resource inputs and emissions per unit of output. Although several social, economic and technological policies would produce an emission reduction, with respect to climate change, mitigation means implementing policies to reduce GHG emission and enhance sinks" – see para 3.2.3.

²⁰⁵⁴ See paras 3.2.3, 3.2.3.

²⁰⁵⁵ See paras 3.6.4, 4.2.3.

²⁰⁵⁶ See para 2.5.3.

²⁰⁵⁷ See para 2.5.2.

²⁰⁵⁸ See para 3.2.3.

²⁰⁵⁹ See para 3.2.3.

required.²⁰⁶⁰ Various plans and policies provide for climate change mitigation through the use of energy efficiency, cleaner production strategies, demand side management and the transition to a less intensive emissions energy mix providing for efficiency and competitiveness as well as incentivising economic growth in sectors with lower energy intensities.²⁰⁶¹ The government's mitigation vision and effective climate change response in the long-term, in pursuit of a just transition to climate-resilience and lower carbon economy is to be achieved by building climate resilience and transitioning the economy and the people to a lower-carbon economy.²⁰⁶² A fair response and contribution is said will be made to reduce GHG emissions in this transition.²⁰⁶³ An extensive range of objectives and principles are to be implemented in developing mitigation and adaptation strategies guided by some of the UNFCCC principles.²⁰⁶⁴ Environmental financial reforms are part of governments strategy in mitigating against GHG emissions. Flagship programmes are to be part of the response financed by fiscal allocations in the form of conditional grants, integrated grants for municipalities and the Public Transport Infrastructure and Systems Grant.²⁰⁶⁵ Recommendations towards a low carbon economy include retrofitting and making use of clean coal technologies as well as making use of carbon capture technologies developed by research and development.²⁰⁶⁶ The objectives of the government through various plans such as the NDP are to be financed by developmental finance, project finance, equity finance and debt finance which is seen as critical funding in promoting industrial policy.²⁰⁶⁷ It is suggested that the concept of sustainable development in South Africa is to be decoupled from rising resource consumption and increased waste outputs via the application of technologies and systems that reduce the so-called "total material requirements" of expanding

²⁰⁶⁰ See para 2.5.3.

²⁰⁶¹ See para 4.2.

²⁰⁶² See para 4.2.

²⁰⁶³ See para 4.2.

²⁰⁶⁴ See para 4.2. The mitigation plan will adopt the peak, plateau and decline trajectory adopting a phased over time approach. In terms of a 4.7 of the UNFCCC South Africa has made mitigation commitments of 34% and 42% deviation below its Business-as-Usual emissions growth trajectory by 2020 and 2025 respectively.

²⁰⁶⁵ See para 4.2.

²⁰⁶⁶ See para 4.2.

²⁰⁶⁷ See para 4.2.

production and consumption.²⁰⁶⁸ In promoting cleaner production strategies, renewable energy is to be increased in terms of the IRP, fuel switching especially in commercial and residential sectors and energisation, domestic and industrial efficiency programmes are to be made use of.²⁰⁶⁹ The promotion of the green economy will be necessary in achieving all the above objectives and aligning them with the long-term nature of climate change.

Regional bodies such as the EU to which the United Kingdom is still a member at the writing of this thesis, have successfully championed binding emission reduction targets and under its Directive 2003/87/EC of the European Union Emission Trading Scheme (EU ETS) member states are to mitigate their carbon emissions.²⁰⁷⁰ Emissions not covered under the EU ETS are covered by the individual national targets set under the Effort Sharing Decision.²⁰⁷¹ A mandatory EU-wide cap-and-trade system was created by the EU ETS for GHG emissions in covered sectors augmented by directives that increase the use of renewables as part of the overall mitigation strategy.²⁰⁷² Other policy initiatives of the EU include the "Pathways for the Transition to a Net-Zero Greenhouse Gas Emissions economy and Strategic Priorities" plan which promotes the reduction of GHG.²⁰⁷³

The AU under the Assembly took a Decision on Climate Change and Development in Africa resulting in recommendations of a plan entitled "Climate Information for Development Needs: An Action Plan for Africa - Report and Implementation Strategy".²⁰⁷⁴ Endorsement by Member States and Regional Economic Communities in collaboration with the private sector, civil society and development partners led to integration of climate change considerations into development strategies and programmes at national and regional levels. In Africa, mitigation is important for two reasons; the first is that the mitigation response of the rest of the world will have an

²⁰⁶⁸ See para 4.2.

²⁰⁶⁹ See para 4.2.3.

²⁰⁷⁰ See para 3.3.1.

²⁰⁷¹ See para 3.3.1.

²⁰⁷² See para 3.3.1.

²⁰⁷³ See para 3.3.1.

²⁰⁷⁴ See para 3.3.2.

impact on Africa and secondly Africa is becoming a major emitter of GHG as a result of land-use change amounting for 20 per cent of total anthropogenic emissions.²⁰⁷⁵

Nigeria as an oil state has a well-entrenched investment in fossil fuel, this makes renewable energy deployment difficult under the circumstances.²⁰⁷⁶ The Nigerian mitigation strategy under the National Climate Change Policy and Response Strategy (NCCPRS) aims to provide a framework for responding to climate change-induced challenges such as increased flooding and rising sea levels.²⁰⁷⁷ The country's current Vision 2020 plan provides for some deployment of renewable energy in electricity generation by increasing the share of renewables to 20 per cent.²⁰⁷⁸ The Renewable Energy Master Plan provides for tax exemptions in the bio-fuel industry.²⁰⁷⁹ The most recent action by the Nigerian government has been the conclusion of a National Policy on Renewable Energy and Efficiency and sets a target of 30GW, an aspirational figure set by the President.²⁰⁸⁰ The National Policy on Climate Change aims to foster a low-carbon high growth economic path and build a climate-resilient society through the attainment of set goals.²⁰⁸¹ Adaptation rather than mitigation is the main focus of the plan, it includes concrete targets in the area of adaptation, afforestation and energy supply. The mission of the plan is to strengthen national initiatives to adapt and mitigate climate change through active dialogue with affected parties such as women, with the overall context of advancing sustainable socio-economic development.

Kenya has progressively provided for climate change mitigation strategies over time. The Kenyan National Climate Change Response Strategy states unequivocally that climate change is "unmistakeable".²⁰⁸² The Constitution under articles 10 and 42 provide for environmental protection.²⁰⁸³ The Kenyan *Climate Change Act* provides mainstreams climate change through various sectors. Measures and mechanisms

²⁰⁷⁵ See para 3.3.2.

²⁰⁷⁶ See para 3.3.2.

²⁰⁷⁷ See para 5.2.

²⁰⁷⁸ See para 5.2.

²⁰⁷⁹ See para 5.2.2.

²⁰⁸⁰ See para 5.3.3.

²⁰⁸¹ See para 5.3.3.

²⁰⁸² See para 5.3.1.

²⁰⁸³ See para 5.3.1.

provide for a low carbon and resilient economy. The National Climate Change Action Plan enables the implementation of mitigation and adaptation strategies.²⁰⁸⁴ This plan is supported by enabling actions and is driven by a National Climate Change Council.²⁰⁸⁵

6.1.3 Climate finance

Climate finance is critical to the climate change debate, so much so that the UNFCCC in accordance with the principle of "common but differentiated responsibilities and respective capabilities" stated that developed countries shall "provide new and additional financial resources" to assist developing countries in fulfilling their obligations under article 11 of the Convention.²⁰⁸⁶ The principal aim of climate finance was to assist many of the developing nations confront climate change through mitigation and adaptation strategies.²⁰⁸⁷ Article 11.2 of the *Kyoto Protocol* provided the much-needed impetus for climate finance required by developing countries in implementing projects to address climate change.²⁰⁸⁸ The Copenhagen Accord committed developed countries to "new and additional" resources in the form of "Fast-start Finance" of US\$ 30 billion between 2010 and 2012.²⁰⁸⁹ An additional US\$ 100 billion a year by 2020 to address the needs of developing countries "from a wide variety of sources, public and private bilateral and multilateral, including alternative sources of finances in the context of meaningful mitigation actions and transparency on implementation" was to be mobilised by developed countries.²⁰⁹⁰ Cancun affirmed the agreements made and this was seen as the start of climate finance and saw the setting up of the GCF.²⁰⁹¹ In Paris at COP21 developed nations pledged again to finance "US\$100 billion a year for the dissemination low-carbon technologies; the

²⁰⁸⁴ See para 5.3.1.

²⁰⁸⁵ See para 5.3.1.

²⁰⁸⁶ See para 3.2.2.

²⁰⁸⁷ See para 3.4.

²⁰⁸⁸ Whilst there is not an agreed-on definition of climate finance, both the UNFCCC and the IPCC provide definitions. It is, however, agreed that it aims to reduce GHG emissions and vulnerability from the negative impacts of climate change.

²⁰⁸⁹ See para 3.4.

²⁰⁹⁰ See para 3.4.

²⁰⁹¹ See para 3.4.

implementation of a reimbursement mechanism for damage from the global warming to the most exposed countries, was also planned".²⁰⁹² The *Paris Agreement* emphasised transparency, and enhanced predictability of financial support as well as the making financial flows consistent with pathways towards low GHG emissions and climate resilient development.²⁰⁹³

Climate finance is provided for in articles 4 and 11 of the UNFCCC.²⁰⁹⁴ Article 7 provides additional regulations in which the mobilisation of resources is provided for under 2(h). Article 21(3) provides for GEF, UNEP and the World Bank to be the interim entities entrusted with the mobilisation of climate finance.²⁰⁹⁵ Article 11 of the *Kyoto Protocol* provided for the mobilisation of climate finance. Article 4 provides a framework for developed countries to assist developing countries with additional financial resources. Additional financial resources to be provided by Annex II countries shall be new and additional resources to meet the agreed full costs incurred by developing country Parties in the compliance of their obligations.²⁰⁹⁶ These financial resources are to be provided for in the transfer of technology, needed by developing countries to meet their incremental costs of implementing measures and commitments. These commitments according to article 4(3) shall take into account the need for adequacy and the importance of appropriate burden sharing among developed country Parties.²⁰⁹⁷ Developed countries that fall under Annex II, in terms of article 4(4) are to assist developing countries Parties that are particularly vulnerable to the adverse effects of climate change with the meeting of their costs of adaptation to those adverse effects.²⁰⁹⁸ The intention of the UNFCCC in terms of article 4 is to serve as full financial support by developed countries to developing countries that are acting in terms of their commitments.²⁰⁹⁹ Article 11(2)(a) of the *Kyoto Protocol* affirms the financial assistance shall be new and additional to

²⁰⁹² See para 3.4; Romano *et al Climate Finance* 26.

²⁰⁹³ See para 3.4.

²⁰⁹⁴ See para 3.4.

²⁰⁹⁵ See para 3.4.

²⁰⁹⁶ See para 3.4.

²⁰⁹⁷ See para 3.4.

²⁰⁹⁸ See para 3.4.

²⁰⁹⁹ See para 3.4.

developing countries and Annex II countries under article 11(2)(b) shall also provide for the transfer of technology.²¹⁰⁰ Article 11 of the UNFCCC provides for financial resources in a grant or on a concessional basis and it shall have an equitable and balanced representation of all Parties.²¹⁰¹ Climate finance is complex and is complicated by process and a lack of priorities.²¹⁰²

Climate finance in South Africa is addressed as resource mobilisation in the *National Climate Change Response White Paper*, with the government seeking to expand the number of instruments available to address climate change constraints.²¹⁰³ An interim climate finance coordination mechanism was to be formed in terms of the *White Paper* to fund priority programmes, this is still an ongoing process between the DEA and the National Treasury.²¹⁰⁴ A comprehensive package of instruments needs to be developed to respond to the scale of climate change especially the development of market-based instruments. Government seeks to develop both mitigation and adaption strategies in seeking climate finance resources as they are seen in the context of South Africa as having complimentary roles in achieving the objectives of climate change strategies.²¹⁰⁵ Unfortunately, climate finance development in South Africa is uncoordinated thus "reduces the potential positive impact of a composite financing strategy geared towards transitioning to a low carbon and climate resilient economy".²¹⁰⁶ South Africa according to the research done by the DEA/DBSA in terms of its climate change strategy should support the development of a climate resilient region.²¹⁰⁷

²¹⁰⁰ See para 3.4.

²¹⁰¹ See para 3.4.

²¹⁰² See para 3.4.

²¹⁰³ See para 3.4.

²¹⁰⁴ See para 3.4.

²¹⁰⁵ See para 3.4.

²¹⁰⁶ DEA 2011 file:///C:/Users/p10180869/Documents/2021/AA-Moyo%20BE%20(26853590)%2020%20LLD/DBSA%20financing_climate_change.pdf 5.

²¹⁰⁷ SADC countries should co-invest in scalable and replicable climate response strategies that reduce the vulnerability of the region to climate change; create regional production capacity and demand for sustainable technologies; build resilient regional infrastructure and develop integrated disaster management and response frameworks - DEA 2011 file:///C:/Users/p10180869/Documents/2021/AA-Moyo%20BE%20(26853590)%2020%20LLD/DBSA%20financing_climate_change.pdf 5.

Kenya is a large recipient of climate finance primarily because of its vulnerability but climate finance is complicated by its devolved system of governance.²¹⁰⁸ Climate finance is coordinated by the National Treasury and as the National Designated Authority, it coordinates climate finance from the GEF and the Climate Investment Funds (CIF).²¹⁰⁹ The *Climate Change Act* under section 25(1) established a national Kenya Climate Fund and is described as "a financing mechanism for priority climate change actions and interventions".²¹¹⁰ A specialised Climate Finance Unit was established responsible for the coordination of funds from the two organisations.²¹¹¹ The National Climate Change Action Plan 2013-17 stated that the aim of the Kenya Climate Fund was to catalyse private sector funding through interacting with other financial intermediaries such as commercial banks.²¹¹² Targeted strategic partnerships would be encouraged to scale climate finance inflows into Kenya with bilateral and multilateral partners.²¹¹³ The National Environment Management Authority (NEMA) is the National Designated Authority for the Adaptation Fund. In terms of the *Climate Change Act* 2016, mainstreaming of climate change is done through the establishment of Climate Change Units in all counties and ministries within their planning and budgeting spheres.²¹¹⁴ Transparency and efficiency of resources is critical to avoid duplication of the use of resources. The *Climate Change Act* mandates the establishment of a National Climate Change Fund at both the national and county level chaired by the President and managed by the Climate Change Council under the auspices of the Treasury.²¹¹⁵ Climate finance is tracked electronically as per the Climate Finance Policy that tracks projects through the e-PROMIS system.²¹¹⁶ This system tracks all climate finance into the country. Climate

²¹⁰⁸ See para 5.3.2. Dzebo, Shawoo and Kwamboka *Coordinating climate finance in Kenya* 2.

²¹⁰⁹ Dzebo, Shawoo and Kwamboka *Coordinating climate finance in Kenya* 2.

²¹¹⁰ UNEP/Kings College 2018 <https://wedocs.unep.org/handle/20.500.11822/26378?show=full> 12.

²¹¹¹ Dzebo, Shawoo and Kwamboka *Coordinating climate finance in Kenya* 2.

²¹¹² UNEP/Kings College 2018 <https://wedocs.unep.org/handle/20.500.11822/26378?show=full> 12.

²¹¹³ UNEP/Kings College 2018 <https://wedocs.unep.org/handle/20.500.11822/26378?show=full> 12.

²¹¹⁴ Dzebo, Shawoo and Kwamboka *Coordinating climate finance in Kenya* 2.

²¹¹⁵ Dzebo, Shawoo and Kwamboka *Coordinating climate finance in Kenya* 2.

²¹¹⁶ Dzebo, Shawoo and Kwamboka *Coordinating climate finance in Kenya* 2.

finance has not received enough attention over the years with insignificant inflows compared to other countries.²¹¹⁷

Nigeria has identified that it is crucial that it funds adaptation and mitigation plans in order to ensure climate resilient economic growth, that it overcomes energy deficiency and facilitates the restoration of environmental health a major issue in the Niger Delta.²¹¹⁸ Nigeria has identified US\$ 142 billion as being required for adaptation and mitigation actions to meet the 2035 target.²¹¹⁹ As a response the government instituted the first sovereign Green Bond in Africa in 2017 as one of the strategies for raising funds for its climate change objectives.²¹²⁰ The National Strategic Climate Change Trust Fund (NSCCTF) is being planned and established with the purpose of establishing a non-refundable contribution from bilateral and multilateral donors, to act as a catalyst for implementing financing mechanisms for climate change adaptation and mitigation initiatives.²¹²¹ The Fund is to be coordinated by the Bank of Industry (BoI).²¹²² The Bank of Industry will be mandated with coordinating Nigeria's climate change finances increasing Nigeria's funding and triggering efficient and effective adaptation and mitigation actions in the short to medium term.²¹²³

²¹¹⁷ See para 5.2. Federal Republic of Nigeria 2020 https://www4.unfccc.int/sites/SubmissionsStaging/NationalReports/Documents/187563_Nigeria-NC3-1-TNC%20NIGERIA%20-%2018-04-2020%20-%20FINAL.pdf 211.

²¹¹⁸ Federal Republic of Nigeria 2020 https://www4.unfccc.int/sites/SubmissionsStaging/NationalReports/Documents/187563_Nigeria-NC3-1-TNC%20NIGERIA%20-%2018-04-2020%20-%20FINAL.pdf 211.

²¹¹⁹ Federal Republic of Nigeria 2020 https://www4.unfccc.int/sites/SubmissionsStaging/NationalReports/Documents/187563_Nigeria-NC3-1-TNC%20NIGERIA%20-%2018-04-2020%20-%20FINAL.pdf 212.

²¹²⁰ Federal Republic of Nigeria 2020 https://www4.unfccc.int/sites/SubmissionsStaging/NationalReports/Documents/187563_Nigeria-NC3-1-TNC%20NIGERIA%20-%2018-04-2020%20-%20FINAL.pdf 212.

²¹²¹ Federal Republic of Nigeria 2020 https://www4.unfccc.int/sites/SubmissionsStaging/NationalReports/Documents/187563_Nigeria-NC3-1-TNC%20NIGERIA%20-%2018-04-2020%20-%20FINAL.pdf 212.

²¹²² Federal Republic of Nigeria 2020 https://www4.unfccc.int/sites/SubmissionsStaging/NationalReports/Documents/187563_Nigeria-NC3-1-TNC%20NIGERIA%20-%2018-04-2020%20-%20FINAL.pdf 212.

²¹²³ Federal Republic of Nigeria 2020 https://www4.unfccc.int/sites/SubmissionsStaging/NationalReports/Documents/187563_Nigeria-NC3-1-TNC%20NIGERIA%20-%2018-04-2020%20-%20FINAL.pdf 212.

Nigeria developed and published a Green Bond Framework in 2017 as part of its international obligations to provide an enabling environment for emissions reductions as outlined in the *Paris Agreement*.²¹²⁴ The collaborative effort between two ministries resulted in Nigeria becoming the first African country to issue a Climate Bonds Certified Sovereign Green Bond.²¹²⁵ This was only the fourth nation in the world to issue such a bond after Poland, France and Fiji.²¹²⁶ The financed or refinanced eligible projects follow the international guidelines of the GBP.²¹²⁷ Success has principally been built on capacity building in the form of local independent verifiers and the clear process guidelines regulated by the Securities Exchange Commission of Nigeria.²¹²⁸ Leverage was created in 2019 when the Nigerian Stock Exchange signed the Green bond MoU at the annual meeting of the World Federation of Exchanges in Singapore.²¹²⁹

Climate finance in the UK was thrust into prominence as a result of the Stern Review which made two essential contributions; inaction towards climate change would be too dire to contemplate and in order to assure credibility as a global leader in climate change, the UK needed to adopt reductions targets.²¹³⁰ This leadership resulted in the first *Climate Change Act* of 2008 and together with the Stern Review, a turning point in the global climate change debate.²¹³¹ The Act which was to serve as model legislation for other countries provided a duty based-framework and coherence for directing the UK's climate change policy.²¹³² Despite the UK becoming the first country to put into law a net zero carbon emissions target for 2050, government action on green bonds has been slow.²¹³³ This has however not negatively affected the Stock market in listing green bonds and it has taken the lead in enabling a sophisticated and innovative data set of ESG tools to be broadly used for

²¹²⁴ See para 5.2.3.

²¹²⁵ See para 5.2.3.

²¹²⁶ See para 5.2.3.

²¹²⁷ See para 5.2.3.

²¹²⁸ See para 5.2.3.

²¹²⁹ See para 5.2.3.

²¹³⁰ See para 5.4.1.

²¹³¹ See para 5.4.1.

²¹³² See para 5.4.3.

²¹³³ See para 5.4.2.

communication with investors in growing the green bond market. The LSE being at the heart of global finance has the one of the largest and most diverse listings of green bonds in multiple currencies.²¹³⁴

6.1.4 Sustainable development

Another driver for green bonds is sustainable development as indicated above. Sustainable development according to Sands is a concept and not a principle or rule, it invokes a legal function and critically it has a procedural/temporal aspect as well as a substantive aspect.²¹³⁵ Sustainable development is inextricably linked to sustainable energy, the basis of which is reliable energy as is required to develop economic activity.²¹³⁶ The continual evolvement of society has resulted in ethical and activist investors demanding socially responsible energy investments that go beyond the profit motive. In the 1990s the investment decision making process was influenced by religious beliefs, values-based and thematic aligned issues.²¹³⁷ It evolved to include investment decisions selection, rejection processes based on conventional financial decision criteria along with moral, environmental, social and governance considerations.²¹³⁸ The incorporation of ESG as a strategy has largely been influenced by the UN Principles for Responsible Investing which defines responsible investing as "a strategy and practice that incorporates environmental, social and governance (ESG) factors in investment decisions and active ownership". ESG serves as a financial barometer for the investor and provides a measure of organisational performance.²¹³⁹

6.1.5 Green bonds

Green bonds have grown from a niche to a mainstream debt instrument designed to facilitate the use of sustainable finance which has the capacity of accelerating the

²¹³⁴ See para 5.4.3.

²¹³⁵ See para 2.5.5.

²¹³⁶ See para 4.2.5.

²¹³⁷ See para 4.2.6.

²¹³⁸ See para 4.2.6.

²¹³⁹ See para 3.5.

transition to sustainability and climate neutrality through the redirection of capital.²¹⁴⁰ Managing climate risks has become an important aspect of investment decision making, pricing climate risk is now an investable opportunity. Green bonds are no different from other bonds except for their "use of proceeds" which indicates that the proceeds must be used for green investments which must be agreed upon at the time of issuance.²¹⁴¹ The differences in approaches, primarily on common criteria and methodology of what constitutes "environmentally beneficial" use of proceeds, has resulted in a lack of an agreed upon definition of what constitutes a green bond which can be dispensed with under a strong regulatory environment.²¹⁴² This lack of regulation is also weakened by a lack of transparency and reporting requirements in some jurisdictions. Regulation has the potential of making tangible impacts on climate finance and financing green investments. Expansion of green bonds into emerging markets has been limited as a result of the nature of the sophistication in the bond market, lack of regulation, investor scepticism and global standards.²¹⁴³ Greenwashing has been an "Achilles heel" in the issuance of green bonds which is defined as "superficial or insincere display of concern for the environment" which creates reputational risk and legal risk.²¹⁴⁴

Sovereign bond issuance has grown and legitimised the market significantly with major issuances from many governments and driven by uniform global efforts to invest in climate finance instruments. Green bonds potentially could transition and drive global economies towards low carbon and efficient use of energy sources. Issued green bonds are generally investment grade and oversubscribed with the benefit of investing in independently verified green projects without taking additional risk.

The GBP have become the globally accepted guidelines on green bonds premised on four core principles which are the use of proceeds, process for project evaluation and,

²¹⁴⁰ See para 3.6.1.

²¹⁴¹ See para 3.1.

²¹⁴² See para 3.6.2.

²¹⁴³ See para 3.6.1.

²¹⁴⁴ See para 3.6.2.

management of proceeds and reporting.²¹⁴⁵ Other guidelines that have developed are the CBS and localised initiatives which should be encouraged as they contextualise the green bond framework adding credence to adherence by local issuers and investors. The GBP recommend as well as emphasise transparency and disclosure through the promotion of integrity by providing an explicatory process for issuance of green bonds.²¹⁴⁶ The green bond principles which are intended for broad use by the market provide guidance on their issuance, give the investor the necessary information required to evaluate the impact that the green bond will have and also assist underwriters in facilitating the transaction with full disclosure of all risks.²¹⁴⁷ The GBP list eligible projects as guidance and these are renewable energy, energy efficiency, pollution prevention and control, environmentally sustainable management of living natural resources and land use, terrestrial and aquatic biodiversity conservation, clean transportation, sustainable water and waste management, climate change adaptation, eco-efficient and/or circular economy adapted products, production technologies and processes and green buildings.²¹⁴⁸ The GBP recommend an External Review process be carried out in the issuance of a Green Bond to confirm alignment with the four core components of the GBP.²¹⁴⁹ The external review process may be in the form of Second Party Opinion, Verification, Certification or Green Bond Scoring/Rating.²¹⁵⁰ The external review may be carried out to cover certain aspects of the green bond, making it partial or it can be a full evaluation of the framework assessing alignment with the four core components of the GBP.²¹⁵¹ Voluntary Guidelines for External Reviewers have been developed to encourage external reviewers to disclose their credentials and relevant expertise.²¹⁵² To promote best practice, reviewers are encouraged to disclose clearly the scope of the review conducted.²¹⁵³ They serve as a market-based initiative to provide

²¹⁴⁵ See para 3.6.3.

²¹⁴⁶ See para 3.6.3.

²¹⁴⁷ See para 3.6.3.

²¹⁴⁸ ICMA 2018 <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/Green-Bonds-Principles-June-2018-270520.pdf> 4.

²¹⁴⁹ See para 3.6.3.

²¹⁵⁰ See para 3.6.3.

²¹⁵¹ See para 3.6.3.

²¹⁵² See para 3.6.3.

²¹⁵³ See paras 3.6.5.

information and transparency on the external review process for all stakeholder which includes issuers, underwriters, investors, and the external reviewers themselves.

The GBP as they are should be encouraged, incorporated into the regulatory framework and be made more robust and mandatory with additional localised stringent policies being complimentary to the overall objective of achieving a low carbon and resilient economy. Definitional issues of what constitutes green should be made within the context of the local area without straying too far from what may be internationally accepted. This may provide perspective on local issues.

6.1.6 Findings

South Africa does not have specific legislation regulating green bonds, although the JSE Listing Requirements correspond to the GBP. However, amongst others, the interests of the issuers and those of the investor need to be aligned. This having been said, green bonds have shortcomings which include, amongst others, costly and complex listing requirements.²¹⁵⁴ Disclosure requirements may be disconcerting to some investors, as the bonds need demonstrable green credentials.²¹⁵⁵ In some jurisdictions green bonds are more expensive to issue because of the multiple layers in the issuance process.²¹⁵⁶ The complex nature of the bond market makes it difficult for less developed countries to issue green bonds.

Green bonds are connected to drivers such as climate change, climate finance and environmental, social and economic governance. Green bonds are no different from "plain vanilla" bonds and as such they should be regulated in the context of financial debt instruments with the express exclusion of fossil fuel related investments. Bonds are a complex debt instrument and the added complexity that may arise from an ecosystem involving the additional green element of the bond, can in the view of the author cause complexity as a result of possible greenwashing. The regulation of green bonds should be harmonised to include both market regulation and national policy

²¹⁵⁴ See para 4.2.12.

²¹⁵⁵ See paras 4.3, 3.3.1, 5.2.2.

²¹⁵⁶ See paras 2.5.1.

into a single framework to avoid confusing issuance. There are several voluntary instruments such as the climate bonds initiative and ISO 14030-1 where specific principles and guidelines could be adopted and incorporated into South African regulation on green bonds.

Nigeria Kenya and the UK provide some learning points for South Africa and that may inform the eventual *Climate Change Act* to provide legal certainty on the use of green bonds.

6.2 Recommendations

It is proposed that a regulatory framework for green bonds be introduced in South Africa. Such a regulatory framework will provide the necessary scale to grow what is arguably a nascent market in South Africa but is now a mainstream market globally. Regulation and supervision through active involvement of both the regulator and the market will adequately provide for market deficiencies that may exist or arise by engagement and necessary amendments of regulatory instruments to keep up with the fluidity of the market.

It is proposed that either new legislation or existing legislation is to be used to achieve this. The issuance of green bonds could also be regulated in terms of a separate chapter in the *Climate Change Bill*, 2018. It could also be dealt with as a regulation that is issued in terms of the eventual Act, but then the Bill will have to be amended to provide for such a regulatory mandate.

The following framework for the regulation of green bonds is proposed.

- Preamble

In this eventual legislation or regulation, it should be acknowledged in, for example a preamble that the legislation is issued to meet the objectives of the *Paris Agreement* and the UNFCCC, as well as those of its INDC. South Africa aligns itself with the growth of sustainable finance solutions capable of financing low carbon and resilient green investments through green projects whilst safeguarding future generations from the effects of climate change in light of section 24 of the Constitution. To achieve

environmentally sustainable development, and the well-being of its citizens, South Africa shall strive to promote the use of green investments that reduce the inequality of resource allocation by providing reasonable legislation and measures that protect the environment.

- Objectives

The objectives of the legislation or regulations should be to develop a green bond market that scales sustainable finance by reducing environmental vulnerability, promote integrity and accountability of the market, transparent and comprehensive data on issuance, ethical disclosure and reporting of green bonds in South Africa.²¹⁵⁷

A further objective would be to finance both mitigation and adaptation green investments that meet national objectives on climate change through national guidelines, standards, and best practice as accepted by National Treasury.²¹⁵⁸ The legislation or regulation should create assurance in green labelling and incorporate ESG principles (and the tracking of achievements) in the investment decision process whilst providing a return on investment and it should drive net-zero GHG carbon emissions through the promotion of green investments by using preferential financing of green investable opportunities, narrowing the gap for green projects and strategies.²¹⁵⁹

- Definitions

Green bonds should be defined and it is proposed that the definition, quoted at the beginning of this chapter is used. The definitions could further include a definition of Green Guidelines and Standards. This definition should refer to green guidelines and standards including the Green Bond Principles as may be amended, issued and governed by the International Capital Markets Association; Green Bond Standards such as the Climate Bond Standard issued by the Climate Bonds Initiative; government policies and guidelines and legislation (for example the eventual *Climate*

²¹⁵⁷ See paras 1.5, 2.5.5, 3.6.4, 5.3.2, 5.4.

²¹⁵⁸ See paras 2.5.4, 3.4, 4.2.6, 4.2.12, 5.2.2.

²¹⁵⁹ See paras 1.2, 2.1, 2.5, 2.5.6, 3.1, 5.3.2.

Change Act); and any other aligned Government policies as well as any other standard acceptable to the National Treasury for non-listed Green Bonds.²¹⁶⁰

Voluntary standards should include reference to any internationally or nationally developed standard that a company voluntarily subscribes to, including for example the ISO standards for green bonds.²¹⁶¹

An environmental objective should refer to an objective set by the issuer that relates to the environment.²¹⁶²

The JSE Debt Listing Requirements should refer to the debt listing requirements of the JSE pursuant to the provisions of the FMA for the listing of securities of debt securities on the JSE, as amended from time to time.²¹⁶³

- Principles

This Green Bond Framework is to be premised on principles set out in the Constitution, the Bill of Rights, the NEMA, the UNFCCC, the *Paris Agreement* and the ICMA Green Bond Principles.²¹⁶⁴ These principles are to be guided by an overall approach that is least-cost based, and aligned to the overall objectives of the *Climate Change Bill*.²¹⁶⁵ The Principles should as a minimum include, the recognition of technological cooperation between States;²¹⁶⁶ common but differentiated responsibilities and respective capabilities;²¹⁶⁷ equity;²¹⁶⁸ special needs and circumstances;²¹⁶⁹ uplifting the poor and the vulnerable;²¹⁷⁰ intra- and inter-generational sustainability;²¹⁷¹ the precautionary principle;²¹⁷² the polluter pays

²¹⁶⁰ See paras 1.2, 2.3, 2.4, 3.6, 3.6.5.

²¹⁶¹ See paras 1.2, 1.7, 2.4, 3.1, 3.6.5.

²¹⁶² See paras 1.1, 3.6.3, 3.6.5, 4.2.3, 4.3.1.2.

²¹⁶³ See paras 1.4.3, 2.3, 4.3.

²¹⁶⁴ See paras 3.2.2, 3.2.3, 3.2.4, 4.2.2, 4.2.3.

²¹⁶⁵ See para 4.2.12.

²¹⁶⁶ See paras 3.2.2, 4.2.6, 5.2.11.

²¹⁶⁷ See paras 2.5.3, 2.5.4, 3.2.2, 4.2.5.

²¹⁶⁸ See paras 2.5.3, 2.5.5, 2.5.6, 3.5, 4.2.2, 4.2.7, 4.4, 5.2.1.

²¹⁶⁹ See para 3.2.

²¹⁷⁰ See paras 2.5.2, 3.2.4, 5.2.1.

²¹⁷¹ See paras 2.5.1, 2.5.3, 2.5.5, 4.2.5, 4.2.9, 5.2.1.

²¹⁷² See paras 2.5.3, 3.2.2, 3.2.3, 4.2.2, 4.2.5, 5.2.1, 5.3.2.

principle;²¹⁷³ informed participation;²¹⁷⁴ sustainable development;²¹⁷⁵ and reference to the ESG Principles.

- Types of Green Bonds

The legislation or regulations must list various types of green bonds and they may include the following:

- o Standard Green Use of Proceeds Bond: a standard recourse-to-the-issuer debt obligation aligned with the GBP.
- o Green Revenue Bond: a non-recourse-to-the-issuer debt obligation aligned with the GBP in which the credit exposure in the bond is to the pledged cash flows of the revenue streams, fees, taxes etc., and whose proceeds go to related or unrelated.
- o Green Project Bond: a project bond for a single or multiple Green Project(s) for which the investor has direct exposure to the risk of the project(s) with or without potential recourse to the issuer, and that is aligned with the GBP.
- o Green Securitised Bond: a bond collateralised by one or more specific Green Projects(s), including but not limited to covered bonds, ABS, MBS, and other structures; and aligned with GBP. The first source of repayment is generally the cash flows of the assets.

- Green Project(s)

The legislation or regulation should further describe what is meant by green project(s), for example, as assets or projects that consider low-carbon initiatives and

²¹⁷³ See paras 4.2.5, 5.2.1.

²¹⁷⁴ See para 4.2.5.

²¹⁷⁵ See paras 2.5.5, 6.1.4.

climate resilience as per the Climate Bonds Initiative Taxonomy, Green Bond Principles as well as projects developed and verified by National Treasury.²¹⁷⁶

The Climate Bonds Initiative's taxonomy on climate-resilient investments should be adapted for South Africa's local conditions (and verified by the National Treasury as suitable projects). A pipeline of investable green projects should be developed by the National Treasury and be made readily available. These green projects could relate to (a) energy (solar, wind, bioenergy, hydropower, geothermal, marine, renewable heat, smart grids, other energy distribution and management); (b) low carbon buildings (new residential buildings, new commercial buildings, retrofit); (c) industry and energy intensive commercial projects (manufacturing, energy efficiency products, retail and wholesale, data centres, energy efficient appliances); (d) waste pollution control (recycling facilities, recycled products); (e) transport (low carbon transport (land), vehicles and rolling stock, public transport, bus rapid transit, alternative fuel infrastructure); (f) information technology and communications (power management, broadband and teleconferencing, systems for resource efficiency); (g) agriculture, forestry and land use (land management, Agriculture, Forestry and Other Land Use adaptation, natural resources management) and (h) water projects (water treatment, water sewerage infrastructure).²¹⁷⁷

- Green Bond Framework of Issuer

A high-level scientific assessment is to be done for the qualifying green projects which is to be followed by a Green Bond Framework based on clear concise objectives. These objectives should be based on monitored specific environmental impacts, which are achievable, relevant, transparent, and theoretically sound.²¹⁷⁸ The Green Bond Framework should indicate how the internal processes within the issuer meet the Green Bond eligibility criteria by describing how the issuer ensures the steps

²¹⁷⁶ The Council for Scientific and Industrial Research (CSIR) could provide guidance to the National Treasury on green projects. Green projects can vary by sector and geography but it is advisable to seek assistance from National Treasury on qualifying projects. See paras 1.2, 4.2.9.

²¹⁷⁷ This is based on the Climate Bonds Taxonomy which identifies eligible projects available on the Climate Bonds Initiative website.

²¹⁷⁸ See paras 2.5.4, 2.5.6.1, 2.5.6.2, 2.7, 4.2.6, 5.2.2.

outlined will be followed, and by allaying any insecurities investors or market participants may have on issuance and disclosure.²¹⁷⁹ An internal decision making processes should be established, documented and maintained. A custodian of the process should be appointed. This process must adhere to the four pillars of the Green Bond Principles and the Climate Bond Standard.²¹⁸⁰

- Green Bond Principle core requirements

The core requirements of the Green Bond Principles should be used in conjunction with the latest Climate Bonds Standard Version 3.0 or any other standard the National Treasury may recommend from time to time. As a minimum provision should be made for:

- Use of Proceeds:

Proceeds of the bond should be used for approved green projects as stated in the legal documentation of the security. Green Projects to be financed by the bond must provide clear environmental benefits, which will be assessed and, where feasible, quantified by the issuer. Green Projects will be listed as per the JSE Green Bond Segment and those that are not listed will be within the ambit of the National Treasury. The Green Bond Principles provide a minimum standard of the market while the Climate Bonds Standard are more stringent as they provide clear requirements and thresholds that projects and assets have to meet. Listed companies should adhere to the higher standards or if the amount exceeds a threshold to be determined by the National Treasury also comply with these standards. It is recommended that the Climate Bonds Standard be followed holding issuance to a higher threshold. Green Bonds can be issued by companies wishing to align or transition to environmentally sustainable business models. Misallocation can be avoided by ear-marking proceeds or ring-fencing funds. Earmarking is the setting aside of funds on the balance sheet for future allocation to Nominated

²¹⁷⁹ See paras 4.3, 3.3.1, 5.2.2.

²¹⁸⁰ See paras 3.6.3, 5.3.2.

Projects and Assets. Ring-fencing occurs when the issuer separates the proceeds from the business-as-usual account or operations.²¹⁸¹ Companies should also be allowed to subscribe to voluntary standards.

- Process for Project Evaluation and Selection

The issuer of the Green Bond should clearly communicate to investors:²¹⁸²

- (a) The environmental sustainability objectives;
- (b) The process by which the issuer determines how the projects fit within the eligible Green Projects categories identified;
- (c) The related eligibility criteria, including, if applicable, exclusion criteria or any other process applied to identify and manage potentially material environmental and social risks associated with the projects; and
- (d) If ESG principles were applied in the decision making.

The selection of the projects should be as transparent as possible with a verifiable process that an investor can trust.²¹⁸³ A selection committee can be appointed dependent upon the size of the organisation; if a listed company, an independent committee should be appointed.²¹⁸⁴ Final approval can be made by the board/council if it is a municipality. An external reviewer, other than the Auditor responsible for accounting processes, has to be appointed.²¹⁸⁵ The external reviewers should be from separate entities and rather an entity specialised in environmental matters.

- Management of Proceeds

²¹⁸¹ See para 3.6.3.

²¹⁸² See para 2.5.6.2.

²¹⁸³ See paras 2.5.3, 2.5.6.1, 2.7, 3.6.5, 5.4.2.

²¹⁸⁴ See paras 2.3, 5.4.1.

²¹⁸⁵ See paras 2.5.6.2, 3.6.3, 3.6.5, 5.3.2.

As per the GBP, "the net proceeds of the Green Bond, or an amount equal to these net proceeds, should be credited to a sub-account, moved to a sub-portfolio or otherwise tracked by the issuer in an appropriate manner, and attested to by the issuer in a formal internal process linked to the issuer's lending and investment operations for Green Projects".²¹⁸⁶ The account must be monitored and administered by an appointed accounting officer with the responsibilities and duties of such appointed person. The balance of the tracked net proceeds should be periodically adjusted to match allocations to eligible Green Projects made during that period. Investors should be regularly kept abreast of any intended types of temporary placements for the balance of unallocated net proceeds.²¹⁸⁷ Unallocated funds should be:²¹⁸⁸

- o held in temporary investment instruments that are assets with high liquidity and safety such as cash, cash equivalent instruments, short-term financial assets, within a treasury function; or
- o held in temporary placements that do not include projects, assets or activities that are inconsistent with the nature of a green bond.

The GBP encourage a high level of transparency through-out the life cycle of the bond and an issuer's management of proceeds must be supplemented by the use of an auditor, or other third party, with the requisite skills in environmental issues and should not be the regularly appointed auditor so appointed in the normal running of the business, the auditor must verify the internal tracking method and the allocation of funds from the Green Bond proceeds. Funds cannot be allocated to other unapproved green projects having undergone the selection process for the intended purpose as green projects funded by a Green Bond.²¹⁸⁹

²¹⁸⁶ See paras 3.6.5, 5.2.2.

²¹⁸⁷ See para 3.6.5, 5.2.2, 5.3.2.

²¹⁸⁸ See para 3.6.5, 5.2.2, 5.3.2.

²¹⁸⁹ See para 2.5.6.2, 3.6.5, 4.3.1.3, 5.3.2.

- Reporting

Information on issued Green Bonds should be readily made available on the use of proceeds to be renewed annually until full allocation, and on a timely basis in case of material developments.²¹⁹⁰ Mandatory quarterly reports should be made available for listed companies and be part of the financial quarterly reporting mechanism of the company. Non-listed entities should be encouraged to do the same as a means of enhancing credibility. Such availability could be made to an authority having such authority to request the aforesaid said information or an investor who has already made an investment into the Green Bond. The annual report prepared by an independent and qualified Verifier/Auditor, should include a list of the projects to which Green Bond proceeds were allocated, with brief descriptions of the projects and allocated amounts and expected impacts as well as geographical locations of the projects. Each project should be accounted for. Impact reporting should be mandatory in the case of material changes and at least once in the lifetime of the bond. Generic information may be made available in circumstances where confidentiality agreements, competitive considerations, or a large number of underlying projects limit the amount of detail that can be made available. However, in the case of an invested investor (party) the recommendation is that full disclosure is made to avoid issuers blatantly claiming confidentiality. GBP recommend the use of qualitative performance indicators, quantitative performance measures where feasible, and disclosure of the key underlying methodology and/assumptions used in the quantitative determination. Issuers with the ability to monitor achieved impacts are the encouraged to include those in their regular reporting. Annual reports should be made available on company websites or published with financial reports.

- External review

²¹⁹⁰ These recommendations are based on paras 3.6, 3.6.3, 3.6.4, 3.6.5, 5.2.2, 5.3.2, 5.4.

Whilst the External Review process does not form part of the four core components of the GBP, it is strongly advised that it does so.²¹⁹¹ An external review provider(s) must be appointed transparently to confirm the alignment of the issued bond and such external reviewer may be local or an international entity with the requisite skills. Such External Reviewer must be remunerated in such a way that prevents any conflicts of interest arising. External Reviewers should have recognised expertise in environmental sustainability or other aspects of the issuance of a Green Bond.²¹⁹² External Reviewers must be:

- affiliated with relevant and widely recognised industry bodies; or
- must have significant and appropriate previous experience in providing external reviews on Green Bonds.

External Reviews have to be split into the following criteria:

- Second Party Opinion²¹⁹³

To be provided by an institution with environmental expertise, that is independent from the issuer. A procurement process may be followed with the Terms of Reference for appointment. The institution should be independent from the issuer's adviser for its Green Bond framework, or appropriate procedures, such as information barriers, must be implemented within the institution to ensure the independence of the Second Party Opinion. Assessments are to be independent, research-based, on the sustainability of the credentials of the Green Bond Principles. In particular, it may include an assessment of the issuer's overarching objectives, strategy,

²¹⁹¹ The following recommendations are based on paras 2.5.6.2, 3.6.3, 5.4.2.

²¹⁹² The GBP encourage independent review of environmental features of the (types of) assets or activities associated with the Green Bond or Green Bond programme, where applicable. See paras 2.5.2, 3.6, 3.6.3.

²¹⁹³ See paras 2.6, 3.6.2, 3.6.3, 5.3.2.

policy and/ or processes relating to environmental features of the type of projects intended for the Use of Proceeds.

- o Verification²¹⁹⁴

An issuer may obtain independent verification against a designated set of criteria, typically pertaining to business processes and/or environmental criteria. Verification may focus on alignment with internal or external standards or claims made by the issuer. Also, evaluation of the environmentally sustainable features of underlying assets may be termed verification and may reference external criteria. Assurance or attestation regarding an issuer's internal tracking method for use of proceeds, allocation of funds from Green Bond proceeds, statement of environmental impact or alignment of reporting with the GBP may also be termed verification. Verifications should be made publicly available.

- Certification

An issuer may have its Green Bond or associated Green Bond framework or Use of Proceeds certified against a recognised external green standard or label. A standard or label defines specific criteria, and alignment with such criteria is normally tested by qualified, accredited third parties, which may verify consistency with the certification criteria.

- Green Bond Scoring or Rating

An issuer may have its Green Bond evaluated or assessed by qualified third parties, such as specialised research providers or rating agencies, according to an established scoring/rating methodology. The output may include a focus on environmental performance data, the process relative to the GBP, or any other benchmark. Such scoring/rating is distinct from credit ratings, which may nonetheless reflect material environmental risks. Local ratings

²¹⁹⁴ See paras 1.5, 2.5.6.2, 3.4, 3.6.3, 3.6.4, 4.2.8, 5.4.2.

may be advisable to provide perspective of the local economic circumstance and geography.²¹⁹⁵

- Green Bond Conditions

In the issuance of a Green Bond, an issuer shall file with the National Treasury:²¹⁹⁶

- A letter committing to invest all the proceeds of the bond in projects of the bond in projects that qualify as green project(s) or assets;
- A feasibility Study and Report stating clearly, the measurable benefits of the proposed Green project or Assets such as Green House Gas reduction, reduction of water use and reduction of harmful emissions;
- A prospectus which shall include project categories, project selection criteria, decision-making procedures, environmental benefits, use and management of the proceeds; and
- An independent assessment or certification issued by a professional certification authority or person approved or recognised by the National Treasury.

A specialised Unit should be formed within National Treasury that will be responsible for Green Bond Issuance in South Africa in coordination with the Reserve Bank of South Africa and the JSE headed by a Director of the Unit.

A strong legal framework will catalyse the growth of green bonds and protect the interests of investors as have been seen especially in the United Kingdom.

The following future research areas are noted:

- An investigation into the practical implementation of green bonds in South Africa and other countries.

²¹⁹⁵ The GBP recommend the use of the template for performed external reviews available on the GBP SBP webpages on ICMA's website. They are also encouraged to fill out the External Review Service Mapping Template available on the website.

²¹⁹⁶ The recommendations are based on paras 2.5.3, 5.3.2.

- ESG as a principle of mitigation and adaptation in climate change law.

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