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SCHOOL OF LAW

**INTERROGATING THE FEASIBILITY OF GREEN TAXES FOR FINANCING
RENEWABLE ENERGY PROJECT IN ZAMBIA: LESSONS DRAWN FROM KENYA
AND SOUTH AFRICA**

BY

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An obligation essay submitted to the University of Lusaka for partial fulfilment of the requirement for the award of bachelor of laws (LLB) Degree.

2025

DECLARATION

I declare that this dissertation entitled, **INTERROGATING THE FEASIBILITY OF GREEN TAXES FOR FINANCING RENEWABLE ENERGY PROJECT IN ZAMBIA: LESSONS DRAWN FROM KENYA AND SOUTH AFRICA** which is hereby submitted in partial fulfilment of the requirement for the award of a Bachelor's Degree at the University of Lusaka is my own original work and it has not been previously submitted for the award of a degree at this University or any other tertiary institution. I understand what plagiarism entails and I'm aware of the University's policy in this regard. Thus, where other people's work is cited, I have duly acknowledged. The errors or omissions in this work are solely mine.

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fulfils the requirements relating to the format as laid down in the regulation governing
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DEDICATION

This dissertation is dedicated to the Lord Almighty, whose guidance has been constant source of strength and wisdom throughout my academic journey. I also dedicate this work to my beloved parents, Mr. Jonas Kamwengo and Mrs. Fridah Namangolwa Kamwengo and my siblings, Mrs. Bupe Kamwengo Lungu, Ms. Grace Kamwengo, Ms. Eillen Britel Kamwengo, Misheck Kamwengo and Mweo Kamwengo. Through their unwavering support, love, encouragement and sacrifices, they made it possible for me to successfully complete my program of study. I am eternally grateful to each of you and remain deeply indebted for your encouragement and sacrifices.

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ABSTRACT

This dissertation investigates the feasibility of implementing green taxes as a mechanism to promote renewable energy development in Zambia, drawing comparative insights from Kenya and South Africa. Against the backdrop of Zambia's growing energy deficit and dependence on hydroelectric power, the study explores how fiscal instruments such as carbon taxes, pollution levies and tax incentives for clean technologies can stimulate investment in renewable energy projects. Through a mixed-methods approach combining policy analysis, stakeholder interviews and a comparative review of legislative frameworks and research examines the effectiveness, challenges, and socio-economic implications of green taxation in the selected countries. Findings from Kenya and South Africa highlight the importance of coherent policy design, institutional capacity, and public acceptance in ensuring successful implementation. The study concludes that while Zambia possesses significant renewable energy potential, effective deployment of green taxes will require a balanced fiscal framework that aligns environmental objectives with economic growth and social equity. The research contributes to policy discourse on sustainable energy financing in Sub-Saharan Africa and offers practical recommendations for designing green tax systems suited to Zambia's economic and institutional context.

"This document contains quoted material that is intentionally presented verbatim for academic analysis. All sources are cited accordingly."

CHAPTER ONE

1.0 INTRODUCTION

Green taxes include taxes on energy, transport, pollution and resources¹. Green taxes have emerged as an effective fiscal policy tool for promoting environmental sustainability and funding renewable energy projects globally. Exploring the feasibility of green taxes as a mechanism for financing renewable energy projects in Zambia is a timely and critical endeavour. Zambia, like many nations, faces the dual challenge of addressing energy poverty while transitioning to a sustainable energy future. Green taxes—levies imposed on activities or products that harm the environment—offer a potential pathway to generate revenue for renewable energy initiatives while incentivizing environmentally friendly practices. Green taxes could provide a sustainable funding stream, but their implementation requires careful consideration of economic, social, and political factors.

Drawing lessons from South Africa and Kenya can provide valuable insights. South Africa has made strides in renewable energy through its Renewable Energy Independent Power Producer Procurement Programme (REIPPPP), which has attracted significant private investment². The country has also explored carbon taxes as a tool to reduce emissions and fund green initiatives. Meanwhile, Kenya has emerged as a leader in geothermal energy and has implemented policies to support renewable energy development, including feed-in tariffs and tax incentives.

By examining the successes and challenges faced by these countries, Zambia can identify best practices and potential pitfalls. Key considerations include the design and implementation of green taxes, their impact on different economic sectors, and the mechanisms for ensuring that the revenue generated is effectively channelled into renewable energy projects.

1.1 BACKGROUND

The world is moving towards using more renewable energy, and it's no longer just a choice—it's something we must do. Countries are dealing with serious problems like climate change, damage to the environment, and not having enough energy. Using fossil fuels has caused more pollution, rising temperatures, and overuse of natural

¹ <https://taxation-cudtoms.ec.europa.eu> green taxation-European commission

² <https://www.gihub.org> scaling sustainable infrastructure

resources. To help speed up the use of renewable energy, both rich and poor countries are trying new ways to get money. One of these ways is green taxes, which are charges on things that harm the environment. These taxes can help governments get money while also encouraging people and businesses to make better environmental choices.

Zambia, like many countries in Sub-Saharan Africa, has its own energy problems.

Most of the electricity in Zambia comes from hydropower, which makes up over 80% of the country's energy production. Although hydropower is considered renewable, relying too much on it makes Zambia very vulnerable to climate issues, especially droughts. Recent energy shortages in 2015, 2019, and 2023, with long periods of power cuts, showed how risky it is to depend on just one energy source. To improve energy security, the Zambian government now wants to use more solar, wind, biomass, and other renewable energy sources. However, this shift is hard because there isn't enough money, the costs of getting started are high, private companies aren't involved much, and the country depends a lot on foreign funding.

Green taxes could help Zambia build a more stable source of money for its renewable energy projects.

The money from these taxes can be used to build new energy systems, help make clean energy cheaper, pay for research, or improve government plans. Also, when designed well, green taxes can push businesses and homes to use cleaner ways of making things and more efficient energy. But it's important to plan these taxes carefully so that they don't hurt the poorest people and still fit with Zambia's overall financial and growth goals.

Other African countries have had good results with green taxes and renewable energy.

Kenya has done well in using renewable energy, especially geothermal and wind, thanks to policies, taxes, and support from the government. Kenya uses things like special taxes on energy, charges on certain products, and payment systems for

renewable energy to help attract private investment and keep energy affordable for people. South Africa introduced a carbon tax in 2019, supported by renewable energy procurement schemes through Independent Power Producers (IPPs), which has expanded renewable energy capacity and created a favorable policy environment for investment. Both cases highlight the importance of integrating green taxation with comprehensive policy frameworks that foster sustainable energy investment and support for energy transition. For Zambia, the possibility of introducing green taxes carries both potential and limitations. Although the implementation of a green tax could encourage investment in renewable energy and reduce reliance on external funding, Zambia's economic challenges, including a weak formal economy, widespread poverty, and political intention are essential factors in determining the success of such a policy. Careful planning, with transparency, political will, and public support are crucial for effective implementation. Without these considerations, green taxes might be ineffective, and could even lead to adverse outcomes. Green taxation could cause heavy tax burden, foster public opposition, and may not yield significant benefits. It is crucial to approach the overweighting and integration mass within governance to ensure effectiveness in policy implementation. Investors and reform efforts should prioritize careful design and implementation to ensure effectiveness and maximize benefits. The adoption should consider the critical issues regarding equity within the policy to ensure benefits are equitably distributed. This would help in optimizing the transformative potential of green taxation in the country's transition to sustainable energy and development.

South Africa introduced a carbon tax in 2019, supported by renewable energy procurement programs through Independent Power Producers (IPPs).

These measures have expanded renewable energy production, creating stable policy frameworks that attract both domestic and international investment. Both cases show how green taxation can support environmental sustainability and stimulate investment in renewable energy. For Zambia, adopting green taxes presents a complex opportunity. It can secure financial resources and reduces reliance on external donor support. However, Zambia's economic conditions, including a high informal sector, persistent poverty, and fiscal challenges, may limit the effectiveness of green taxes if

not carefully planned. Political determination, institutional capacity, and public acceptance are vital. Adequate safeguards are required to ensure green taxes support sustainable progress rather than cause an unequal burden. South Africa transition in sustainable development. The importance of transparent governance, economic reform, and public engagement. Careful policy design is necessary to ensure practical outcomes. Beneficial impact depends on addressing challenges through safeguards that ensure equitable benefits. Effective implementation requires reconciliation and planning for a transformative transition. Investment and development should prioritize both economic and environmental sustainability. Policy implementation must focus on delivering progressive outcomes for health and well-being, ensuring that green taxes support sustainable progress. The adoption should involve planning to ensure policies deliver both financial and environmental outcomes. South Africa introduced a carbon tax in 2019, supported by renewable energy procurement programs through Independent Power Producers (IPPs). These measures have expanded renewable energy capacity and created a stable policy environment that attracts both domestic and international investments. The success of green taxes requires a sustainable framework that encourages clean energy. For Zambia, adopting a green tax presents both opportunities and challenges. It can promote renewal in policy and reduce dependency on foreign funding. However, limitations are imposed by South Africa visa political intention, institutional readiness, and public support which are essential for effective implementation. Without proper planning, green taxes could impose burdens on low-income groups, incite public resistance, or fail to generate sustainable results. Green taxation must be carefully designed to ensure effectiveness in advancing both economic developments. It is crucial to ensure a balanced approach that encourages investment and sustainability. Equal sharing of the benefits through transparency and public engagement. Groomed green taxes and proper framework would help maximize the positive impact. Factors influencing effectiveness include inclusive policies and strong governance. Green taxes should be used to promote sustainability and transformation in economic development. The implementation would benefit if the framework ensures a fair distribution of benefits and includes both environmental and economic priorities. Success would require proportional consideration of risks and opportunities, supporting a transformation through energy policy and investment. Green taxation's success depends on informed and inclusive policy formulation. It would lead to a well-rounded framework that supports efficient sustainable

development. The implementation should focus on supporting energy transition and reform. Implementation would benefit if the framework ensures a fair and effective use of green taxes for a balanced approach. Success would require proportional consideration of risks and opportunities, supporting a transformation through energy policy and investment. Green taxation's impact depends on informed and inclusive policy formulation. It would lead to a well-rounded framework that supports efficient sustainable development. The implementation should focus on supporting energy transition and reform. Green taxation needs a structured agenda that supports a balanced sustainable approach for beneficiaries. This requires a comprehensive strategy that ensures the effectiveness and equity of green taxation in achieving sustainable development.

1.2 STATEMENT OF THE PROBLEM

Globally, green taxes have emerged as innovative tools for both generating revenue and promoting environmentally sustainable behaviour. Revenues from such taxes can be earmarked to fund renewable energy projects, while the tax mechanism itself discourages environmentally harmful practices. However, Zambia's green taxes lack empirical research and a clear policy framework to assess feasibility considering the unique socio-economic landscape and drawing on concrete lessons from regional experiences like Kenya and South Africa.

1.3 OBJECTIVE OF THE STUDY

This study aims to provide a comprehensive analysis of the feasibility of green taxes in Zambia, informed by the experiences of South Africa and Kenya. It will explore the economic, environmental, and social implications of such taxes and offer recommendations for policymakers to create a sustainable and inclusive energy future for Zambia.

1.4 RESEARCH OBJECTIVES

1. To evaluate the effectiveness of green tax policies in Kenya and south Africa.
2. To assess the feasibility of implementing green taxes in Zambia.
3. To propose policy recommendation for green tax framework.

1.5 RESEARCH QUESTION

1. What green tax policies have been implemented in Kenyan and South Africa, and what impact have they had on renewable energy financing?
2. What economic, political, and social challenges and opportunities exist for green tax adoption in Zambia?
3. How can Zambia structure a green tax framework to maximize investment in renewable energy while ensuring economic sustainability?

1.6 SIGNIFICANCE OF THE STUDY

This study is significant for several reasons, particularly in the context of Zambia's ongoing efforts to transition towards a more sustainable and resilient energy sector. That is promoting Sustainable Development which Zambia is committed to achieving through Sustainable Development Goals (SDGs), particularly SDG 7³ (affordable and clean energy) and SDG 13⁴ (climate action). This research provides evidence-based insights that can inform the Zambian government and policymakers on the practicality and design of green taxes as a tool of mobilizing domestic resource, as it seeks to reduce reliance on donor funding and exploring innovative policies such as green taxation. The study explores institutional readiness and government frameworks necessary for implementing green fiscal policies. This is crucial for ensuring that any proposed tax reforms are administratively feasible and aligned reforms broader development goals. It similarly addresses a critical gap in the financing of renewable energy infrastructure which is often constrained by limited public budget and low private sector participation. By evaluating green taxes as a potential financing mechanism, the research contributes to identifying realistic solutions for expanding renewable energy investment. It also contributes to the growing body of literature on sustainable finance, green fiscal reform and climate policy. Through examination the research raises awareness about green taxes among citizens, businesses and policymakers. This study's theoretical contribution lies in applying 'polluter pays' principle to the specific context of a developing nation's energy transition.

³ United nations 2030 Agenda for sustainable development

⁴ ibid

1.7 LITERATURE REVIEW

The transition to renewable energy is critical for addressing climate change, energy insecurity, and environmental degradation. In developing countries, financing renewable energy infrastructure remains a major challenge due to high upfront costs, limited domestic revenue, and reliance on donor funding (IRENA, 2022)⁵. In Zambia the Green tax that is existing is carbon pricing which is limited to transport and is based on carbon emission surcharge based on engine size. The challenges in expansion are that there is weak regulation clarity and fiscal pressures to roll out expansive tax regimes.

Donastorg et al 2017⁶, One of the major energy policy strategies applied in many countries worldwide is the employment of renewable energy sources (RES), because energy is one of the main sectors that fuels the global economic activity. This relates to how efficient the energy sector growth across the economy. The energy sector is directly connected to the sustainability and vibrancy of a countries economy. Any major decision made in the Energy sector will have a ripple effect throughout the economy. Until recently Renewable energy (RE) investments were treated in the same manner as any other investment, yet RE investments possess certain characteristics that require a high level of understanding. Many developing countries have embarked on a renewable energy transformation, due to the agreement and international commitment to reducing global emission, in addition to creating economic opportunities and increasing energy access of the population. This study reaffirms the researcher's emphasis on renewable energy as an economic opportunity although Zambia started exploring green fiscal tools but it remains in an early stage, the country is developing a green growth strategy and exploring green finance initiatives.

Chemonics Egypt consultants⁷, sustainable energy investment opportunities Zambia is poised for a significant transformation on its energy landscape, driven by a combination of rising population, GDP growth and rapid urbanization and industrialization. These factors create a strong and dynamic market for renewable energy and energy efficiency solutions across diverse sectors. Zambia has made

⁵ International Renewable Energy Agency (2022). Renewable energy financing in Africa

⁶ Donastorg et al 2017 lop conference: earth and environment science-financing renewable energy project in developing countries

⁷ Chemonics Egypt Consultants, sustainable energy investment opportunities in Zambia.

significant strides in advancing renewable energy and energy efficiency through a series of progressive action, key initiatives include the Renewable Energy Strategy and Action Plan (RESAP)⁸, which provides a comprehensive roadmap for the adoption of renewable energy technologies. The researcher is of the view that, the above stated series of actions can be achieved through green taxes.

Hussaini Bala and Ghousia Khatoon⁹, African nations encounter difficulties enforcing regulations and providing incentives for using renewable energy sources. However, several nations are making efforts to encourage renewable energy through financial and tax advantages. Therefore, a shift to renewable energy is essential for African nations to experience sustainable growth. Similarly, the extant literature examining green taxes influence on renewable energy technology has documented equivocal findings. The study shows that the green taxes of commonwealth countries in Africa significantly contribute to the growth of renewable energy technologies.

Tii N Nchofoung and others¹⁰, there is substantial literature on the determinants of renewable energy consumption. This growing interest is related to the fact that renewable energy is not only one of the main drivers of greenhouse gas mitigation but also its contribution to the achievement of other sustainable goals. Despite this strategic role, the adoption level of renewable energy remains quite low. The researcher is of the view that the higher contribution and adoption of renewable energy, the higher the achievement and contribution to sustainable development.

Naoyuki Yoshino and Farhad¹¹, the main obstacle to the development of Renewable Energy (RE) project is lack of access to finance. Tax revenues are refunded to the investors in energy projects and such fiscal policy reform will increase the rate of return of energy projects. The challenges faced by financing renewable energy can possibly be financed through green taxes.

⁸ <https://www.moe.gov.zm> Renewable Energy Strategy and Action plan

⁹ Hussaini Bala and Ghousia Khatton, effect of green taxation on renewable energy technologies

¹⁰ Tii N Nchofoung, Herve Kaffo, Clovis Miamo, green taxation and renewable energy technologies adoption: global evidence

¹¹ Naoyuki Yoshino and Farhad Taghizadeh-Hesary, alternative to private finance: Role of fiscal policy reforms and energy taxation in development of renewable energy projects.

Favourate Y. Mpofu¹², green taxes have become pivotal to protecting the environment, revenue generation and achievement of the Sustainable Development Goals (SDGs). Proponents of green taxes argue that they enable the correction of market failures, reduce the distortionary effects of the other tax heads, and ensure that the costs of externalities are institutionalized in the price of a product. This study is relevant to the researcher because it shows that green taxes lead to ecologically sustainable actions, provide an opportunity to address current and future environmental problems, enhance the efficiency of tax system, generate revenue and promote the equity of tax system.

Kabiru Kamalu & Wan Hakimah Banti Wan Ibrahim¹³, policymakers in developing countries should strive to undertake tax reform to achieve efficient tax system. They should formulate and enforce effective environmental tax to accelerate full decarbonization and achieve SDGs. The authors believes that with a strengthened ecosystem and implementation of value added tax and exemption for renewable energy equipment and gradual tax reforms the goal would be achieved.

Feng Hao and Wanyun Shao¹⁴, large-scale greenhouse gas emissions are mainly caused by the consumption of fossil fuels. Thus, promoting renewable energy is one key strategy to mitigate these emissions and combat climate change. It is affirmed that the implementation of carbon taxes and energy levies reduces emission and funds renewable energy initiatives.

To fight climate change, using green fiscal policies is really important. Taxes and subsidies can push businesses and people to use more eco-friendly technology and lower their carbon emission. Green taxes are a type of tax placed on activities that hurt the environment. They are designed to internalize the external costs of environmental degradation, thereby ensuring that polluters bear the cost of the damage they cause¹⁵. The effectiveness of green taxes depends on several factors, including the tax rate, coverage, administrative capacity, and socio-economic context. Misaligned or poorly

¹² Favourate Y Mpofu, Green taxes in Africa: opportunities and challenges for environmental protection, sustainable, and the attainment of sustainable development goals

¹³ Kabiru Kamalu & Wan Hakimah Banti Wan Ibrahim, towards full decarbonation: does environmental tax and renewable energy matters in developing countries

¹⁴ Feng Hao and Wanyun Shao, what really drives the deployment of renewable energy? A global assessment of 118 countries

¹⁵ Peace D (1991). The role of carbon taxes in environmental policy

implemented taxes may disproportionately affect low-income households, creating social equity concerns¹⁶. In addition, there is evidence that green taxes can incentivize firms and consumers to adopt cleaner technologies, consistent with the Polluter Pays Principle, which holds that those responsible for environmental harm should bear the cost of mitigation (OECD, 2001).

Bhattacharya & Stern¹⁷, scholars argue that domestic fiscal mechanisms, such as green taxes, are essential for sustainable renewable energy financing. By raising domestic resources, green taxes can reduce reliance on external funding, increase financial autonomy, and support the development of a stable renewable energy sector.

1.8 THEORETICAL FRAMEWORK

Environmental Fiscal Reform (EFR) Theory

EFR Theory says that using tools like environmental taxes can fix market failures, promote sustainable behaviour, and generate revenue for environmental initiatives (OECD, 2005). The theory emphasizes the dual role of taxation. One is to make polluting activities more expensive, which makes businesses and households choose better environmental choices. The other is to collect money that can be used to support environmental protection, renewable energy projects, and clean technology. EFR theory helps look at how green taxes can both stop pollution and bring in funds for Zambia's renewable energy programs. This theory also supports the polluter pays principle, which means that those causing environmental harm should pay for the damage they cause. Using EFR theory, the study can check if Zambia's financial and system setup can carry out effective green taxation.

1.8.1 PUBLIC FINANCE THEORY

Public Finance Theory emphasizes the central role of taxation in resource mobilization, income redistribution, and efficient allocation of public goods¹⁸. From this perspective, green taxes are not only environmental tools but also instruments for domestic revenue mobilization. In Zambia, where renewable energy financing is constrained by dependence on external funding, Public Finance Theory underscores

¹⁶ Metcalf, G.E (2019). On the economics of a carbon tax for the United States

¹⁷ Bhattacharya, A., Stern, N (2021) financing renewable energy in developing countries: challenges and opportunities

¹⁸ Musgrave, R A & Musgrave, P.B (2019). Public finance in theory and practice

the potential of green taxes to generate sustainable, locally controlled resources. By integrating Public Finance Theory, the study examines how green taxes can be structured to maximize revenue without imposing excessive burdens on vulnerable populations. This includes evaluating equity, efficiency, and administrative feasibility in the Zambian context.

1.8.2 POLLUTER PAYS PRINCIPLE

The Polluter Pays Principle (PPP) is a normative environmental principle asserting that entities responsible for environmental harm should bear the costs of mitigation or remediation (OECD, 2001). PPP complements both EFR and Public Finance theories by providing the ethical and policy rationale for imposing green taxes. In practice, this principle ensures that environmental costs are internalized rather than subsidized by the general population, which is particularly relevant in Zambia where hydropower and emerging renewable sources face environmental and social trade-offs.

1.9 DEFINITION OF KEY TERMS AND ABBRIVIATIONS

EFR – Environmental fiscal reform

SDGs – Sustainable development goals

RE- Renewable energy

REIPPPP- Renewable energy independent power producer procurement programme

REFIT- Renewable energy feed-in tariff

RES- Renewable energy resource

RESAP- Renewable energy strategy and action plan

GDP – Gross domestic product

Green taxes and environmental taxes can be used interchangeably

1.10 RESEARCH METHODOLOGY

This study will adopt a qualitative descriptive and comparative design, focusing primarily on Zambia while drawing lessons from Kenya and South Africa through document analysis. A qualitative approach is most suitable as it allows for an in-depth understanding of the feasibility of green taxes in Zambia, while the comparative aspect provides insights from regional countries like Kenya and South Africa that have already

experimented with such fiscal instruments. The research will combine descriptive, exploratory, and comparative elements to highlight Zambia's renewable energy financing challenges, assess the potential applicability of green taxes. The target population of the study will include policymakers from the Ministry of Finance, the Ministry of Energy, and the Zambia Revenue Authority; regulators such as the Energy Regulation Board (ERB) and the Zambia Environmental Management Agency (ZEMA); and representatives from the private sector and civil society organizations involved in renewable energy advocacy and participants with direct expertise in energy, taxation, and environmental policy. For Kenya and South Africa, the study will rely on secondary data sources, including government policy documents, taxation frameworks, energy reports, academic publications, and reports from international organizations such as the World Bank, the African Development Bank (AfDB), and the International Renewable Energy Agency (IRENA).

1.11 RESEARCH APPROACH

The study adopts a qualitative approach with a descriptive, exploratory, and comparative design. The descriptive aspect examines Zambia's current energy financing and policy environment; the exploratory aspect investigates the potential applicability of green taxes in the Zambian context; and the comparative aspect draws lessons from Kenya and South Africa, where environmental tax measures have been applied to support renewable energy development. This approach is appropriate given the policy-oriented nature of the study and the need for in-depth insights rather than statistical generalizations

1.12 DATA ANALYSIS

The data for this study will be analysed using thematic analysis. Interview responses and secondary documents will be coded to identify key themes on renewable energy financing, taxation frameworks, and policy feasibility. Comparative synthesis will then be applied to highlight similarities, differences, and transferable lessons from Kenya and South Africa to Zambia. The analysis will be guided by the study objectives, ensuring that findings directly address the research problem and provide practical policy recommendations.

1.13 ETHICAL CONSIDERATION

This research shall be in line with ethical standards that shall be encountered in the process of conducting it. the researcher will see to it that all the information obtained shall not violate any written laws, customs and belief or any individual rights. Prior concert shall be obtained from individuals willing to participate in the study. The researcher shall duly recognize the works of other scholars and authors and shall be shown through OSCOLA style of referencing.

1.14 CONCLUSION

In conclusion, this study highlights the vital role of green taxes as a potential mechanism for financing renewable energy projects in Zambia, leveraging lessons from South Africa and Kenya to provide actionable insights. By thoughtfully designing and implementing green taxes, Zambia can tackle its energy challenges, enhance environmental sustainability, and foster economic growth through green initiatives. The experiences of South Africa and Kenya show that, although green taxes offer significant opportunities, their success depends on robust policy frameworks, stakeholder engagement, and transparent use of generated revenues. Zambia has the capacity to implement innovative strategies suited to its unique socioeconomic and political landscape, ensuring that the transition to renewable energy is inclusive and fair. Ultimately, this study offers a basis for informed policymaking, aiming to establish Zambia as a leader in sustainable energy development in the region. By utilizing the potential of green taxes, Zambia can create a greener, more resilient energy future that benefits all citizens.

CHAPTER TWO

EVALUATING THE EFFECTIVENESS OF GREEN TAX POLICIES IN KENYA AND SOUTH AFRICA

2.0 INTRODUCTION

This chapter evaluates the effectiveness of green tax policies in Kenya and South Africa, in line with the second research objective, which seeks to assess how these policies have performed in achieving environmental and fiscal outcomes. The analysis moves beyond description to evaluate their performance using key criteria: economic efficiency, environmental impact, administrative feasibility and social equity. These dimensions provide a structured lens through which to assess what has worked, what has and the lessons that may be applicable to Zambia. Kenya and South Africa have pursued different yet complementary green fiscal strategies. Kenya's model relies on sector-specific levies and fiscal incentives while South Africa's framework integrates carbon taxation and renewable procurement mechanisms. Evaluating their effectiveness allows for an understanding of how institutional capacity, policy coherence and socio-economic contexts influence the success of green tax regimes.

2.1 EVALUATING GREEN TAX POLICIES IN KENYA

2.1.1 POLICY CONTEXT

Kenya is recognised as a leader in renewable energy in Sub-Saharan Africa, with over 80% of its electricity generated from renewable sources, particularly geothermal and wind¹⁹. Its fiscal approach combines levies, excise duties and incentive schemes aimed at promoting clean energy investment. The central question however is not what instruments but how effectively they have achieved their intended environmental and fiscal goals.

2.1.2 EVALUATION OF KEY GREEN TAX INSTRUMENTS

- a) The Rural Electrification Levy (REL) is Imposed at 5% on electricity, have played a vital role in financing off-grid electrification and renewable projects in rural areas²⁰. Although this levy guarantees a steady revenue stream, concerns

¹⁹ Government of Kenya (2021). Kenya energy Sector Report. Ministry of Energy.

²⁰ Energy and Petroleum Regulation Authority (EPRA,2020). Annual Energy and Statistics Report. Nairobi.

remain about its impact on low-income consumers who face affordability challenges.

- **Efficiency:** The rural electricity initiatives provide a predictable funding source for rural electrification but its efficiency is constrained by the limited elasticity of electricity demand meaning consumer have little choice but to pay the levy.
- **Environmental Impact:** The levy has successfully expanded renewable energy access on off-grid areas, contributing to Kenya's high renewable share.
- **Administrative Feasibility:** Collection through existing utility billing systems enhances feasibility, through fund misallocation risks remain.
- **Equity:** The levy's regressive nature raises affordability concerns for low-income households, highlighting the need for targeted subsidies.

b) **Excise Duties on Fossil Fuels:** Taxes on petroleum products aim to discourage fossil fuel use while generating revenue for clean energy initiatives²¹. While effective as a revenue source, their impact on reducing fossil fuel dependency has been modest due to transport sector reliance on petroleum.

- **Efficiency:** Excise duties on fossil fuels generate substantial revenue but have limited success in reducing fossil fuel dependency because of Kenya's heavy transport reliance on petroleum.
- **Environmental Impact:** Marginal in reducing emissions, the price signal is insufficient to drive large-scale modal shifts.
- **Feasibility:** Implementation is straightforward through existing tax systems.
- **Equity:** These duties disproportionately burden low-income groups, reinforcing the need for compensatory social policies.

c) **Feed-in Tariff (FiT) Policy:** Though not a tax per se, FiTs act as fiscal incentives to attract investment in renewable projects by guaranteeing predictable

²¹ Kenya Revenue Authority (2022). Excise Duty and Environmental Taxation Policy Brief.

returns²². This policy has particularly driven geothermal investment, making Kenya Africa's largest producer of geothermal power.

- Efficiency: FiTs have attracted considerable private investment, particularly in geothermal projects, making Kenya a global leader in that domain.
- Environmental Impact: Strongly positive, substantial renewable capacity has been added.
- Feasibility: Predictable policy framework promotes investor confidence.
- Equity: The benefits are indirect but socially positive through improved energy access and employment.

2.1.3 SUMMARY OF EFFECTIVENESS

Overall, Kenya's green tax instruments demonstrate moderate to high environmental effectiveness and sound administrative feasibility but equity and efficiency challenges persist. The success of FiTs and the Rural Electrification Levy shows that targeted fiscal tools can drive renewable expansion when revenue use is transparent and aligned with specific policy objectives. The Rural Electrification Levy has directly contributed to expanding rural access to electricity and renewable energy technologies. Excise duties have provided revenue and moderate behavioural change, while FiTs have encouraged significant private investment into the sector. However, enforcement challenges, governance gaps, and affordability issues remain, particularly for low-income households²³. Similarly, the absence of a comprehensive carbon pricing framework limits Kenya's ability to systematically reduce fossil fuel dependence.

2.2 EVALUATING GREEN TAX POLICIES IN SOUTH AFRICA

2.2.1 POLICY CONTEXT

South Africa's economy is heavily industrialised and coal-dependent, resulting in high greenhouse gas emissions. The government's green tax agenda centred on the Carbon Tax Act²⁴ seeks to correct environmental externalities while sustaining economic competitiveness. It is the most industrialised economy in Sub-Saharan

²² Ministry of Energy (2019). Feed-in Tariff Policy for Renewable Energy projects. Nairobi

²³ UNEP (2020). Green Fiscal Policy in Kenya: Review and Evaluation. United Nation Environment Programme.

²⁴ Carbon Tax Act (2019).

Africa and consequently, one of the continent's largest emitters of greenhouse gases (GHGs). Coal accounts for more than 70% of electricity generation, making the energy sector a key contributor to the country's emissions profile²⁵. This reliance on fossil fuels has created significant environmental concerns, including air pollution, high per capita emissions, and challenges in meeting international climate obligations under the Paris Agreement²⁶. The government has therefore recognised the need to reform its fiscal and energy policies to steer the economy toward sustainability.

In this context, green taxation has been positioned as both a corrective and a revenue-generating mechanism. The adoption of the Carbon Tax Act (2019) was a landmark development, marking South Africa as the first country in Africa to legislate a nationwide carbon tax²⁷. The tax is designed to place a price on carbon emissions, thereby encouraging industries to adopt cleaner technologies and reduce their environmental footprint. At the same time, the revenue raised provides fiscal space to support renewable energy programmes, research, and development. South Africa's policy background is also shaped by broader socio-economic dynamics. High unemployment, inequality, and energy poverty present constraints to aggressive environmental taxation²⁸. The evaluation focuses on how effectively these instruments have influenced industrial behaviour, fiscal performance and emission outcomes.

2.2.2 EVALUATION OF KEY GREEN TAX INSTRUMENTS

- I. Carbon Tax Act (2019): The Carbon Tax is the flagship instrument of South Africa's green fiscal reform. It imposes a levy of ZAR 120 per ton of CO₂-equivalent emissions in its first phase, with gradual increases planned in subsequent phases²⁹. To mitigate economic disruption, the Act includes allowances of up to 95% for energy-intensive industries, effectively lowering the initial tax burden³⁰. Despite criticism that such allowances weaken the incentive to reduce emissions, the gradual approach reflects the government's attempt to maintain competitiveness and protect jobs in coal-dependent sectors.

²⁵ South African Development of Energy (2020). Integrated Resource Plan (IRP 2019) Pretoria.

²⁶ OECD (2021). Environmental Performance Review: South Africa. Organisation for Economic Co-operation and Development.

²⁷ National Treasury, Republic of South Africa (2019). Carbon Tax Act No. 15 of 2019.

²⁸ World Bank (2020). South Africa Country Climate and Development Report.

²⁹ SARS (2022). Carbon Tax Implementation Guide. South African Revenue service.

³⁰ National Treasury (2021). Carbon Tax Policy Review. Pretoria

- Efficiency: the initial tax rate (ZAR 120 per ton CO₂e) provides a price signal, but wide allowances (up to 95%) weaken its short-term impact. Nonetheless, it establishes a critical policy foundation for future tightening.
 - Environmental Impact: Early evidence shows modest emissions reductions and growing corporate investment in efficiency. However, measurable emission declines remain limited due to structural dependence on coal.
 - Feasibility: Implementation benefits from strong institutional capacity and emissions reporting systems through political resistance has slowed expansion.
 - Equity: Phased allowances protect industrial employment but may favour large emitters over smaller firms or households.
- II. Environmental Levies: Alongside the carbon tax, South Africa has long applied product- and activity-based levies aimed at environmental sustainability. The electricity generation levy imposes a charge on non-renewable electricity, primarily coal-fired power³¹. In addition, plastic bag levies and other product taxes are collected with the dual aim of discouraging environmentally harmful consumption and generating modest revenues for environmental programmes³². These levies, though smaller in scale than the carbon tax, play an important role in raising awareness of environmental costs among consumers.
- Efficiency: These levies are administratively simple and contribute small but steady revenues.
 - Environmental Impact: Modestly they promote awareness and incremental behavioural change.
 - Feasibility: Easy to enforce through existing fiscal channels.
 - Equity: Generally neutral but limited in redistributive effect.
- III. Renewable Energy Independent Power Producer Procurement Programme (REIPPPP): Although not a tax, REIPPPP operates in tandem with fiscal instruments to expand renewable capacity. Under this

³¹ Department of Environmental Affairs (2020). Environmental Fiscal Reform Framework. Pretoria

³² National Treasury (2020). Plastic Bag Levy Policy Evaluation.

programme, the government invites independent power producers (IPPs) to bid for renewable energy projects, with long-term power purchase agreements providing revenue certainty³³. The programme has successfully attracted billions of rand in private investment and facilitated the entry of wind and solar energy into South Africa's power mix. Its complementarity with the carbon tax lies in creating a market for cleaner alternatives, thereby amplifying the corrective function of taxation.

- Efficiency: Highly efficient in mobilising private capital with investment exceeding USD 20 billion.
- Environmental Impact: Significantly increased renewable capacity and diversified the energy mix.
- Feasibility: Strong institutional design and transparency have made it global benchmark.
- Equity: Employment creation and community development components enhance social inclusivity.

2.2.3 SUMMARY OF EFFECTIVENESS

South Africa's green tax framework demonstrates strong institutional and fiscal performance but mixed environmental outcomes due to structural and political constraints. The Carbon Tax has succeeded more as a signal and governance tool than as an immediate emissions reducer. It requires a balanced consideration of both its achievements and limitations. On the positive side, the carbon tax has introduced a clear and predictable price signal for emissions, marking a significant policy innovation in Africa³⁴. By aligning fiscal measures with environmental objectives, South Africa has taken a step toward internalising the social cost of carbon. In addition, the tax has stimulated discussions within industry about low-carbon strategies and investments in efficiency, even if behavioural change has been gradual.

The environmental levies have also contributed, albeit modestly, to shifting consumption patterns. For instance, the plastic bag levy, though criticised for being too low to drastically reduce usage, has nonetheless raised awareness and generated

³³ Department of Mineral Resources and Energy (2022). Renewable Energy Independence Power Producer Procurement programme (REIPPPP) Annual Report.

³⁴ IMF (2021). Fiscal Policies for Climate Change in Emerging Economies: South Africa Case Study.

earmarked revenues for environmental initiatives³⁵. The electricity levy has added fiscal pressure on coal-based power generation, complementing efforts to diversify the energy mix.

The REIPPPP by contrast, has delivered tangible environmental and socio-economic gains underscoring the importance of pairing taxation with investment incentives. It has mobilised significant private sector investment estimated at over USD 20 billion since its inception and has expanded South Africa's renewable energy capacity by thousands of megawatts³⁶. Independent evaluations describe the programme as one of the most successful renewable procurement frameworks globally, particularly in terms of transparency, investor confidence, and competitiveness³⁷. However, effectiveness has been tempered by several challenges. The carbon tax has faced criticism for being undermined by extensive allowances, which reduce its short-term impact on emissions³⁸. Political resistance, particularly from coal-intensive industries and labour unions, has also slowed implementation and limited the ambition of fiscal reforms. Furthermore, South Africa's broader energy crisis, marked by frequent load-shedding and infrastructure inefficiencies, has diverted attention from green tax reforms and constrained their transformative potential.

Despite these limitations, the combination of carbon taxation, environmental levies, and REIPPPP represents meaningful progress in embedding fiscal instruments within the country's broader climate and energy strategy. Their effectiveness lies not only in immediate emission reductions but also in establishing institutional and legal precedents for sustainable energy transitions in Africa.

2.3 COMPARATIVE EVALUATION OF EFFECTIVENESS

When comparing Kenya and South Africa, several dimensions emerge that help to assess the broader lessons for Zambia, the effectiveness of their green tax policies, reflecting differences in economic structure, institutional capacity, and policy design.

Revenue Generation: South Africa's carbon tax has been particularly effective in generating substantial fiscal revenue due to its large industrial base and reliance on

³⁵ UNEP (2022). Review of Environmental Levies in South Africa.

³⁶ International Renewable Energy Agency (IRENA, 2022). South Africa Renewable Energy Investment Report.

³⁷ WWF South Africa (2021). The Carbon Tax and Just Transition Challenges.

³⁸ South African Reserve Bank (2023). Fiscal Revenue and Climate Taxation Report.

coal-fired electricity generation. The tax applies to multiple sectors, including energy, transport, and industry, enabling the government to collect significant funds that can potentially be reinvested in climate mitigation and adaptation initiatives. In contrast, Kenya's Rural Electrification Levy produces a smaller but predictable revenue stream, primarily earmarked to expand access to renewable electricity in rural areas³⁹. While the absolute revenue differs, Kenya's model demonstrates the effectiveness of targeted fiscal instruments in supporting specific development objectives, whereas South Africa's broader taxation approach illustrates the potential of leveraging industrial activity for wider environmental financing. Both cases indicate that green taxes can mobilise domestic resources, though the scale, scope, and allocation mechanisms vary significantly.

Policy Coherence: Kenya's green tax strategy exhibits a high degree of coherence by directly linking levies to sector-specific financing programs. For example, the Rural Electrification Levy ensures that funds collected are ring-fenced for renewable energy expansion, creating a clear link between taxation and tangible environmental outcomes. In South Africa, the carbon tax is embedded within a broader fiscal and regulatory framework that also includes procurement programs for clean energy and energy efficiency incentives. While this allows for flexibility and integration with other environmental and economic policies, it also poses risks: if tax revenues are not transparently allocated, there is potential for environmental objectives to be diluted or overshadowed by competing fiscal priorities⁴⁰. Therefore, Kenya's approach may be considered more focused, while South Africa's system emphasizes adaptability and integration within a complex economy.

Equity Concerns: The distributional impacts of green taxes are an important dimension of effectiveness. Kenya's Rural Electrification Levy, although relatively modest, may disproportionately affect low-income and rural households who already face higher energy costs and limited access to alternative energy sources. This raises concerns about regressive impacts, requiring complementary measures such as subsidies or targeted support to vulnerable populations. In South Africa, the carbon tax initially incorporated allowances and phased implementation to shield industries from

³⁹ Kenya National Treasury (2022). Green Taxation and Fiscal Space Report.

⁴⁰ African Development Bank (2021). Comparative Study on Green Taxation in Africa.

immediate cost shocks, thereby protecting jobs and industrial competitiveness⁴¹. While this helped mitigate negative economic impacts, it also raised questions about fairness and distributive justice, as the benefits of allowances often favor large industrial players over low-income households. Consequently, both countries illustrate the need to balance environmental goals with social equity considerations when designing green taxes.

Institutional Capacity: The effectiveness of green tax policies is heavily influenced by the capacity of institutions to implement, monitor, and enforce them. South Africa benefits from a relatively strong regulatory and administrative framework, enabling enforcement of complex fiscal instruments across multiple sectors and robust reporting requirements for emissions. This capacity allows for more comprehensive oversight and the potential to adjust policies based on performance data. In contrast, Kenya's success relies on pragmatic, sector-specific instruments that are simpler to administer and supported by active donor engagement and stakeholder collaboration⁴². While Kenya may face limitations in broad regulatory enforcement, the focused nature of its instruments and strong partnership networks have enabled effective implementation and tangible environmental outcomes. This highlights that institutional context shapes not only policy design but also the achievable effectiveness of green taxation.

- **Efficiency:** Sector-specific and targeted effective for renewable promotion but limited in scope. Broader fiscal coverage but diluted incentives due to high exemptions. Efficiency depends on policy coherence and the balance between revenue goals and behavioural incentives.
- **Environmental Impact:** Strong in renewable deployment. Modest due to fossil-fuel lock-in but improving via REIPPPP. Policy design must integrate both corrective (tax) and enabling (investment) measures.
- **Administrative Feasibility:** Simple and pragmatic and easily implemented. Complex but institutionally supported. Institutional capacity determines the scope of feasible fiscal reforms.

⁴¹ Oxfam (2022). Inequality and Environmental Taxation in Sub-Saharan Africa.

⁴² UNDP (2021). Institutional Capacity for Green Fiscal policy Implementation in Africa.

- Equity: Regressive effects on low-income groups. Protects industry but less progressive for households. Equity mechanisms (subsidies compensation) are essential for policy legitimacy.

Conceptual lessons for Zambia:

- 1) Targeted and transparent levies (as in Kenya) can effectively finance renewable expansion in resource-constrained settings.
- 2) Systemic carbon taxation (as in South Africa) requires robust institutional and monitoring capacity.
- 3) Hybrid models combining earmarked levies with broader carbon pricing may provide balanced fiscal and environmental outcomes.
- 4) Social cushioning mechanisms are essential to prevent regressive impacts and build public support.

2.4 CONCLUSION

This evaluation demonstrates that both Kenya and South Africa have made progress in aligning fiscal policy with environmental objectives, albeit through different pathways. Kenya's approach shows that targeted levies and incentives can be effective in renewable energy expansion, while South Africa's experience illustrates how carbon taxation and procurement programmes can institutionalise low-carbon transitions within a complex industrial economy. For Zambia, the evaluation underscores that the effectiveness of green tax policy depends on institutional readiness, transparency in revenue use and policy coherence. Designing a green tax regime that balances environmental impact, fiscal efficiency, administrative feasibility and social equity will be critical for sustainable implementation. The insights drawn here therefore directly inform the second research objective by evaluating how the experiences of Kenya and South Africa illuminate the conditions and design principles necessary for an effective green tax framework in Zambia.

CHAPTER THREE

POLICY RECOMMENDATION FOR GREEN TAX FRAMEWORK

3.0 INTRODUCTION

This chapter presents policy recommendations for establishing a green tax framework in Zambia, that can effectively finance renewable energy projects and support environmental sustainability. The discussion directly addresses the study's second objective. The recommendations are built upon the comparative finding from chapter two, which examined the structure, implementation and effectiveness of green taxation in Kenya and South Africa. The analysis in this chapter transitions from comparative evaluation to applied policy synthesis, focusing on how Zambia can adopt contextually appropriate and feasible fiscal instruments to support renewable energy financing. Drawing from the comparative lessons in Kenya and South Africa, the chapter outlines practical strategies for designing a fiscal system that supports renewable energy financing while promoting environmental sustainability. The chapter argues that green taxation offers Zambia a viable mechanism for domestic resource mobilisation and environmental governance, provided that its design and implementation are phased, equitable and institutionally coordinated.

The chapter is structured to discuss the rationale for the framework, the guiding principles, proposed tax instruments, institutional reforms, implementation strategies, and mitigation of potential challenges. Ultimately, green taxation is positioned as both an environmental and developmental necessity that can drive Zambia's transition toward a low-carbon and inclusive economy.

3.1 FEASIBILITY ANALYSIS OF GREEN TAXATION IN ZAMBIA

Assessing the feasibility of introducing green taxes in Zambia requires an integrated evaluation of the economic, fiscal, institutional and political context.

3.1.1 ECONOMIC FEASIBILITY

Zambia's economy remains heavily dependent on mining, which contributes over 70% of export earnings⁴³. This sector is both energy-intensive and carbon-intensive, making it a promising foundation for carbon-related levies. However, the country's

⁴³ Ministry of Finance 2023

industrial sector is small and relatively underdeveloped, limiting its breadth of taxable activities. A targeted green tax system would be more feasible initially.

3.1.2 FISCAL FEASIBILITY

Zambia's fiscal space is constrained by a high public debt-to-GDP ratio (above 100% in 2023) and limited domestic revenue mobilisation capacity⁴⁴. This situation supports the case for green taxation as a tool for both revenue generation and changing behaviour, while highlighting the importance of fiscal neutrality to prevent overburdening productive sectors. Lessons from South Africa's phased approach suggest that gradual tax rates and transitional relief can enhance feasibility without compromising competitiveness.

3.1.3 INSTITUTIONAL FEASIBILITY

Zambia has several important government agencies like the Ministry of Green Economy and Environment (MGEE), the Zambia Revenue Authority (ZRA), and the Energy Regulation Board (ERB). But these agencies don't work well together and there aren't strong systems in place to enforce rules. This lack of coordination and enforcement makes it hard to carry out projects unless there is extra training and better digital tools to help with compliance as seen in Kenya's case.

3.1.4 POLITICAL AND SOCIAL FEASIBILITY

Public acceptance of new taxes is low, especially when citizens perceive limited-service delivery benefits. Therefore, earmarking revenues projects such as rural electrification or waste management will be crucial for political legitimacy. Collectively, these factors indicate that green taxes in Zambia are feasible but require a phased context-sensitive approach anchored in institutional strengthening and social equity.

3.2 RATIONALE FOR A GREEN TAX FRAMEWORK IN ZAMBIA

Zambia's current economic and environmental landscape strongly supports the adoption of a green tax system. The country relies heavily on hydropower, which accounts for over 80% of total generation capacity. Despite being renewable, its hydropower's reliability has been compromised by frequent droughts and climate

⁴⁴ IMF, 2024.

fluctuations, leading to power shortages and productivity loss⁴⁵. These challenges highlight the urgent need to diversify Zambia's energy sources by solar, wind, and biomass energy. The growth of these renewables faces challenges such as high initial costs, limited domestic funding and significant dependence on foreign aid⁴⁶. Introducing a well-structured green tax framework could generate sustainable domestic funding, reduce donor dependence and promote environmental responsibility. Such taxes not only raise revenue but also encourage polluters to cover the costs associated with environmental harm following the Polluter Pays Principle (PPP)⁴⁷.

Moreover, green taxation support Zambia's commitments to sustainable development at both national and global levels. As a Paris Agreement signatory, Zambia has pledged to reduce greenhouse gas emissions and promote climate-resilient development⁴⁸. Domestically, the Eighth National Development Plan (8NDP) and the National Policy on Climate Change advocate for fiscal reforms that support green growth and energy diversification⁴⁹. Implementing environmental taxes such as levies on carbon emissions, fossil fuel consumption, or non-recyclable plastics would therefore strengthen fiscal policy coherence and support Zambia's transition to a low-carbon economy. Beyond protecting the environment, these taxes can broaden government revenue, improve accountability and drive innovation in renewable investment⁵⁰. Ultimately, a green tax system could help Zambia generate sustainable income, enhance environmental health and accelerate progress toward the Sustainable Development Goals (SDGs)⁵¹.

3.3 GUIDING PRINCIPLES FOR POLICY DESIGN

To ensure the success of Zambia's green tax policy in financing renewable and protecting the environment, it must rest on solid design principles. If poorly crafted, the system might burden households unfairly, stifle business competitiveness or fail to deliver real environmental benefits. Therefore, this policy should follow four essential

⁴⁵ ZESCO (2023). Annual Energy Sector Performance Report. Lusaka.

⁴⁶ Ministry of Green Economy and Environmental (2022). National Renewable Energy Status Report.

⁴⁷ UNEP (2021). Polluter Pays Principle and Environmental Fiscal Reforms in Africa.

⁴⁸ UNFCCC (2020). Zambia's Nationally Determined contributions (NDC) Report.

⁴⁹ Ministry of Finance and National planning (2022). Eighth National Development Plan (8NDP).

⁵⁰ *ibid*

⁵¹ IMF (2022). Fiscal Policies for Green Growth in Sub-Saharan Africa.

principles: **The Polluter Pays Principle, Revenue Earmarking and Transparency, Equity and Social Inclusion, and Institutional Coordination**. These principles, drawn from best practices in Kenya, South Africa, and OECD countries, will help create a fair, effective-aligned fiscal framework⁵².

3.3.1 THE POLLUTER PAYS PRINCIPLE (PPP)

The cornerstone of modern environmental fiscal reform, the Polluter Pays Principle, states that those responsible for environmental damage must cover the costs of mitigation and restoration⁵³. This principle ensures that the price of goods and services reflects their true social and environmental costs, thereby encouraging producers and consumers to adopt cleaner practices. In Zambia, adopting PPP within the tax framework would mean that sectors contributing most to pollution—such as mining, transportation, and manufacturing—would pay proportionately higher environmental levies. Such a mechanism not only promotes accountability but also generates revenue for renewable energy investments. The PPP has been successfully integrated into South Africa's carbon tax system and within OECD environmental fiscal policies, demonstrating its capacity to align economic incentives with ecological objectives⁵⁴. If adopted in Zambia, PPP could help correct market failures by internalising external costs, ensuring that polluters finance the country's transition toward sustainable energy.

3.3.2 REVENUE EARMARKING AND TRANSPARENCY

A vital feature of green taxes systems is earmarking revenues allocating collected funds exclusively for environmental renewable energy projects. Earmarking enhances public trust and ensures that revenues achieve their intended purpose rather than being absorbed into general government expenditure⁵⁵. For instance, Kenya's Rural Electrification Levy has proven effective in financing rural access to renewable electricity⁵⁶. Transparency mechanisms, include public reporting, independent audits, and digital monitoring, enhance accountability and deter misuse of funds. In Zambia, earmarking could direct revenues toward solar mini-grid expansion, waste-to-energy projects, reforestation, and community-based energy programs. By institutionalising

⁵² World Bank (2023). Green Growth and Sustainable Development in Zambia.

⁵³ OECD (2021). Design Principles for Effective Environmental Taxation.

⁵⁴ UNEP (2020). Principles of Green Fiscal Policy.

⁵⁵ South African National Treasury (2019). Carbon Tax Act Policy Framework.

⁵⁶ Kenya Revenue Authority (2022). Environmental Fiscal Instruments in Kenya.

transparent revenue management practices, the government can build confidence among citizens, attract private investors, and ensure that green taxes are perceived not as punitive but as constructive tools for sustainable development⁵⁷.

3.3.3 EQUITY AND SOCIAL INCLUSION

Equity and inclusivity are crucial for green taxes to gain political and social acceptance. Without safeguards, these taxes can disproportionately impact low-income households that spend a higher share of their income on energy and transport⁵⁸. To prevent this, Zambia's green tax design must incorporate compensatory mechanisms such as targeted subsidies, exemptions for essential goods, and investment in public transportation and rural electrification. The informal sector, which forms a significant portion of Zambia's economy and could otherwise be excluded from both the benefits and responsibilities of the green fiscal framework⁵⁹. Gender equity matters as well, since women in rural areas often suffer more from energy poverty and environmental degradation. Policies should promote access to affordable clean energy and create employment opportunities in renewable sectors. By ensuring fairness and inclusivity, Zambia can build public support and make its green tax framework both effective and socially sustainable⁶⁰.

3.3.4 INSTITUTIONAL COORDINATION

Successful green taxation depends on coordinated action among government ministries, regulators and civil society. In Zambia, key players include the Ministry of Finance and National Planning, the Ministry of Green Economy and Environment, the Zambia Revenue Authority (ZRA), the Energy Regulation Board (ERB), and the Zambia Environmental Management Agency (ZEMA)⁶¹. These bodies must share data, harmonize policies and monitor compliance efficiently. Establishing a Green Fiscal Policy Committee (GFPC) could provide a platform for inter-agency coordination, policy evaluation, and oversight of green tax revenue allocation⁶². Engaging private investors, academia, and non-governmental organisations can enhance innovation and expand the reach of renewable energy projects. Experiences

⁵⁷ EPRA (2021). Rural Electrification Levy Impact Report.

⁵⁸ AfDB (2022). Public Finance and Environmental

⁵⁹ Oxfam (2022). Social Impacts of Environmental Taxes.

⁶⁰ ILO (2021). Informal Sector and Green Jobs in Africa.

⁶¹ UNDP (2021). Gender and Energy Access in Sub-Saharan Africa.

⁶² ZRA (2023). Institutional Capacity Assessment Report.

from South Africa's *Renewable Energy Independent Power Producer Procurement Programme (REIPPPP)* and Kenya's public-private partnerships in renewable infrastructure demonstrate that coordinated institutional frameworks significantly improve implementation efficiency and policy outcomes⁶³. A green fiscal policy should be established to coordinate implementation composed of representatives from the ZRA, MGEE, ERB, ZEMA and the Ministry of Finance.

3.4 RECOMMENDED GREEN TAX INSTRUMENTS

The effectiveness of Zambia's green tax framework hinges on choosing tax instruments that balance environmental impact, administrative ease and economic viability. Drawing lessons from Kenya, South Africa, and global best practices, Zambia can adopt a mix of corrective and incentive-based fiscal instruments. The following subsections outline the most feasible and impactful green tax instruments that could be implemented in the Zambian context⁶⁴.

3.4.1 CARBON TAX

A carbon tax is one of the most widely recognised instruments for reducing greenhouse gas emissions charges per ton of carbon dioxide (CO₂) emitted, thereby adopting cleaner technologies and reduce their carbon footprint⁶⁵. For Zambia, the tax would target high-emission sectors such as mining, transportation, and manufacturing, that contribute significantly to national emissions. This aligns with the *Polluter Pays Principle* by internalizing environmental costs. South Africa's Carbon Tax Act (2019) demonstrates the importance of gradual implementation with transitional allowances and sector-specific adjustments to ease economic impacts⁶⁶. Zambia could adopt a phased approach that starts with large industrial emitters before expanding coverage to other sectors as institutional capacity strengthens.

3.4.2 ENERGY EFFICIENCY LEVY

An energy efficiency levy is a charge on non-renewable electricity production and consumption, designed to encourage both producers and consumers to improve energy efficiency⁶⁷. Zambia could apply this levy to fossil fuels or inefficient generation

⁶³ Department of Energy South Africa (2022). REIPPPP Progress Report.

⁶⁴ African Development Bank (2023). Fiscal Tools for Climate Finance in Africa.

⁶⁵ IMF (2022). Carbon Taxation and Fiscal Reform in Developing Economies.

⁶⁶ National Treasury RSA (2021). Carbon Tax Review Report.

⁶⁷ ERB (2023). Energy Efficiency and Taxation Policy Review.

systems, with proceeds ring-fenced for renewable energy projects, energy audits and capacity building. Kenya's electricity levies and South Africa's energy-efficiency incentives are models⁶⁸. Some revenue might fund public awareness on solar technologies and efficient appliance. This levy would reduce energy waste and spur industries shift towards cleaner, more efficient production.

3.4.3 PLASTIC AND WASTE MANAGEMENT TAX

Plastic pollution is an escalating environmental problem in Zambia, causing land degradation and ecosystem harm. A tax on non-recyclable plastics and packaging would discourage their use and fund solid waste management and recycling infrastructure⁶⁹. Similar levies in South Africa and Rwanda have successfully reduced plastic consumption and stimulated recycling industries⁷⁰. Zambia could apply a tiered rates favouring biodegradable and recyclable materials incentivizing sustainable packaging innovation. Tax rebates for companies adopting eco-friendly packaging could further encourage positive change.

3.4.4 RENEWABLE ENERGY DEVELOPMENT LEVY

A small surcharge on electricity consumption, the renewable energy development levy, would finance clean energy expansion⁷¹. Kenya's Rural Electrification Levy, at 5% on electricity bills, has proven effective in funding rural grid extensions and off-grid renewable projects⁷². Zambia could implement a comparable scheme through the Energy Regulation Board (ERB), directing funds to solar mini-grids, rural electrification, and renewable research. This approach includes cross-subsidies where urban consumers help finance rural clean energy access. Industrial users might receive partial exemptions during initial phases to ease transition.

3.4.5 FISCAL INCENTIVES FOR GREEN INVESTMENT

Fiscal incentives complement corrective taxes by encouraging sustainable investment. Zambia could introduce benefits like accelerated depreciation on renewable energy equipment, import duties exemption on green technologies, and reduced VAT rates for solar products⁷³. These incentives would attract private

⁶⁸ Ministry of Energy Kenya (2020). Energy Efficiency Strategy.

⁶⁹ UNEP (2021). Plastic Pollution and Fiscal Instruments.

⁷⁰ Rwanda Environment Management Authority (2020). Plastic Ban and Taxation Review.

⁷¹ ZESCO (2023). Renewable Energy Investment Plan.

⁷² EPRA (2022). Rural Electrification and Renewable Financing Report.

⁷³ OECD (2020). Tax Incentives for Green Investments.

investment, stimulate local manufacturing of green technologies, and enhance competitiveness in renewable sectors. South Africa's Section 12L of the Income Tax Act, which provides deductions for verified energy-efficiency savings, and Kenya's exemption on renewable energy components offer useful precedents⁷⁴. Transparent oversight ensures these incentives promote effective green investment and position Zambia as a leader in sustainable energy innovation.

3.5 INSTITUTIONAL AND LEGAL REFORMS

For Zambia's green tax framework to function effectively, institutional and legal reforms must support implementation. Without clear coordination mechanisms and enforcement even the best-designed tax systems may fail⁷⁵. Therefore, strong legislation, capable institution and administrative efficiency are essential.

3.5.1 LEGISLATIVE ALIGNMENT

Zambia's existing laws includes the **Environmental Management Act No. 12 of 2011**, the **Public Finance Management Act**, and the **Income Tax Act**, which provide potential entry points for integrating green fiscal policies⁷⁶ but lack specific provisions for green taxes and revenue earmarking. The government should enact a **Green Fiscal Reform Act (GFRA)** to formalise green taxation, specify revenue utilisation, ensure accountability, define tax bases, rates, and exemptions while empowering enforcement agencies. The law should align with Zambia's obligations with international conventions such as the Paris Agreement and regional frameworks under the **Southern African Development Community (SADC)**⁷⁷.

3.5.2 ADMINISTRATIVE CAPACITY

Administrative capacity is vital for the efficient collection, monitoring, and enforcement of green taxes⁷⁸. The **Zambia Revenue Authority (ZRA)** needs technical tools and expertise to assess emissions, enforce rules and oversee fund use. Digital technologies such as emissions monitoring software and data-sharing platforms between the ZRA, Ministry of Green Economy and Environment, and the Energy

⁷⁴ SARS (2022). Section 12L Incentives Evaluation.

⁷⁵ Ministry of Justice Zambia (2024). Draft Green Fiscal Reform Act Consultation Paper.

⁷⁶ SADC Secretariat (2023). Regional Environmental Taxation Framework.

⁷⁷ ZRA (2022). Capacity Development Strategy 2022-2025.

⁷⁸ ERB (2022). Digital Energy Monitoring Report.

Regulation Board (ERB) would enhance transparency and efficiency⁷⁹. Training and public private partnerships will further strengthen institutional performance, preventing leakage and building public trust.

3.5.3 STAKEHOLDER ENGAGEMENT

Public acceptance of environmental taxes depends on inclusive and transparent stakeholder engagement⁸⁰. The government must consult key stakeholders including industries, civil society, academia, and local communities during policy formulation and implementation. Experience from South Africa's carbon tax demonstrates that stakeholder dialogue reduces resistance and improves compliance⁸¹. Zambia must conduct broad consultation and run public education campaigns to communicate benefits of environmental fiscal reform. Effective communication can transform public perception of green taxes from punitive levies into tools for national progress.

3.5.4 REGIONAL AND INTERNATIONAL COOPERATION

Regional cooperation within bodies such as **SADC** and **COMESA** can enhance the effectiveness of Zambia's green taxation by promoting policy harmonisation and reducing competitive distortions⁸². Coordinated regional fiscal policies could prevent "carbon leakage," where businesses relocate to countries with weaker environmental regulations. Internationally, Zambia could also benefit from climate finance mechanisms such as the **Green Climate Fund (GCF)** and the **Africa Climate Change Fund**, using these to complement domestic revenues raised through green taxation⁸³. Such cooperation enhances policy credibility and attract renewable energy investment.

3.6 PROPOSED FRAMEWORK FOR ZAMBIA'S GREEN TAX POLICY

The proposed policy framework integrates fiscal, institutional, and social dimensions to promote renewable energy development and sustainable growth, taking lessons from Kenya and South Africa while adapting to Zambia's context⁸⁴. It focuses on five pillars: policy objectives, tax instruments, revenue allocation, institutional

⁷⁹ ZEMA (2023). Stakeholder Consultation Framework for Environmental Policy.

⁸⁰ WWF (2021). Public Participation and Carbon Tax Acceptance in South Africa.

⁸¹ COMESA (2022). Regional Climate Policy Harmonisation Report.

⁸² GCF (2023). Zambia Climate Policy Finance Access Strategy.

⁸³ Ministry of Green Economy (2024). Proposed Green Tax Framework for Zambia.

⁸⁴ UNDP (2023). Integrating Fiscal and Environmental Policy in Developing Economies.

mechanisms, and monitoring and evaluation⁸⁵. The aim is to secure stable domestic funding for renewable energy and environmental protection, reducing reliance on external funding dependence⁸⁶. Zambia should adopt a hybrid tax model combining corrective taxes, such as carbon and plastic levies, with incentive-based measures like tax exemptions for renewable technologies⁸⁷. Revenues must be ring-fenced for projects including solar mini-grids, clean transport projects, reforestation, and climate adaptation programs⁸⁸. A Green Fiscal Policy Committee would coordinate agencies, oversee fund allocation, enforce compliance, and publish annual impact reports, while transparent reporting, independent audits, and data-driven reviews would ensure accountability and continuous policy improvement⁸⁹. This approach would embed sustainability into Zambia's fiscal system and position the country as a regional green fiscal leader⁹⁰.

3.7 ANTICIPATED CHALLENGES TO IMPLEMENTING GREEN TAXES

While the introduction of green taxation presents significant opportunities for Zambia's sustainable development, implementation is likely to face challenges from economic resistance, administrative limitations, political considerations, and low public awareness. Addressing these barriers proactively is crucial for the successful rollout and long-term sustainability of the proposed green tax framework⁹¹.

3.7.1 ECONOMIC RESISTANCE

Economic resistance is a key challenge, particularly from industries such as mining, manufacturing, and transport, which may view environmental levies as threats to profitability and growth⁹². This can be addressed through phased implementation, starting with low tax rates and gradually increasing them, alongside measures such as a Green Innovation Fund, transitional tax credits, and grants for firms adopting renewable energy solutions⁹³. Transparent communication is essential to turn opposition into cooperation.

⁸⁵ IMF (2023). Hybrid Environmental Tax Models in Emerging Economies.

⁸⁶ AfDB (2023). Sustainable Fiscal Reform Implementation Toolkit.

⁸⁷ ZRA (2024). Proposed Green Fiscal Policy Committee Mandate Paper.

⁸⁸ World Bank (2022). Challenges in Environmental Tax implementation.

⁸⁹ Zambia Chamber of Mines (2023). Industry Position on Carbon Tax.

⁹⁰ IMF (2023). Green Innovation Fund Design and Implementation.

⁹¹ ZRA (2023). Administrative Barriers in Tax Collection Report.

⁹² Ministry of Finance (2023). Digitalisation of Revenue Systems.

⁹³ UNEP (2022). Public Awareness in Environmental Fiscal Reforms.

3.7.2 ADMINISTRATIVE CONSTRAINTS

Implementing green taxes effectively requires strong monitoring, data accuracy and inter-agency. Limitations in human resources, data integration, and enforcement capacity at the Zambia Revenue Authority (ZRA), Ministry of Finance, and Ministry of Green Economy and Environment could lead to tax evasion or misallocation of funds⁹⁴. Investment in digital infrastructure, transparent reporting, targeted training and establishing a dedicated Environmental Tax Unit can mitigate these risks. Partnerships with international organisations will also help.

3.7.3 POLITICAL AND SOCIAL ACCEPTANCE

Political and social acceptance is critical, as green taxes may be perceived as punitive or revenue-generating without clear public benefits. Transparent use of revenues in renewable energy, public transport, reforestation, and rural electrification, along with stakeholder involvement and public education campaigns, can foster trust and compliance⁹⁵. Evidence from Kenya and South Africa show that clearly communicated investment improves acceptance.

3.7.4 EQUITY AND POVERTY CONSIDERATIONS

Environmental taxes often disproportionately affect low-income groups, raising concerns about fairness. To address this, targeted subsidies for clean energy exemptions for essential items, social safety nets and community-based renewable projects should be integrated⁹⁶. Fairness in green taxation promotes both environmental and inclusive economic goals.

3.8 CONCLUSION

This chapter has laid out a well-reasonable and context-sensitive green tax framework for Zambia, drawing on experience from Kenya and South Africa. Although Zambia's fiscal and institutional capacity are limited, strategic design focusing on earmarked revenues, phased rollout, institutional collaboration and social inclusion can produce practical, impactful green taxes. Such a system offers multiple benefits: environmental sustainability, revenue generation and green innovation promotion. By adopting a hybrid tax model with clear governance and public engagement, Zambia can advance

⁹⁴ Ministry of Green Economy (2024). National Green Taxation Implementation Strategy.

⁹⁵ Green Taxes in Africa: Opportunities and Challenges for Environmental Protection, Sustainability and the Attainment of Sustainable Development Goals (2022)

from reliance on external funding to sustainable, domestically funded green growth. This approach will anchor Zambia's transition to a resilient, low-carbon economy aligned with national and international development goals.

CHAPTER FOUR

POLICY RECOMMENDATIONS FOR A GREEN TAX FRAMEWORK IN ZAMBIA

4.1 INTRODUCTION

This chapter presents policy recommendations for developing a coherent green tax framework in Zambia with the principal objective of mobilising domestic tax-based finance to unlock and scale up investment in renewable energy projects. Drawing upon the lessons from Kenya and South Africa, the chapter proceeds by synthesising the key findings of the comparative analysis of these two jurisdictions, establishing guiding principles for a green tax regime tailored to the Zambian context, presenting detailed recommendations across multiple dimensions (legislative/institutional design; tax instrument design; revenue allocation; stakeholder engagement; regional/international cooperation), discussing implementation strategies, and finally analysing anticipated challenges alongside mitigation measures. By integrating comparative evidence with Zambia's contextual realities, the chapter propose a systematic approach to designing and implementing green taxation instruments that can both raise sustainable revenue and catalyse the country's transition to low-carbon energy.

4.2 COMPARATIVE LESSONS FROM KENYA and SOUTH AFRICA AND IMPLICATION FOR ZAMBIA

Kenya and South Africa offer distinct yet complementary insights into how taxation can be aligned with renewable energy policy. Kenya's approach demonstrates the use of tax incentives to lower entry barriers for renewable technologies, while South Africa illustrates how fiscal instruments can simultaneously generate revenue and incentivise green investment.

In Kenya exemptions from import duties and VAT on renewable equipment (e.g. solar cell, modules and wind turbines) have effectively reduced upfront costs for investors. However, Kenya's framework remains incentive-driven rather than revenue-generating as it lacks a dedicated green tax mechanism. The lesson for Zambia is that tax relief alone does not create sustainable financing streams for renewable energy development.

By contrast, South Africa has developed a more mature green fiscal framework. Section 12BA of the Income Tax Act allows accelerated deductions (125%) for renewable energy assets, and carbon fuel levies are being integrated into the national

budget. These instruments serve dual purposes raising revenue while incentivising carbon reduction and are underpinned by strong institutional coordination between the National Treasury and the South African Revenue Service.

For Zambia, these comparative insights suggest three key implications:

1. **Institutional Legitimacy and Policy Alignment:** Green tax instruments must be embedded in law and integrated with national energy and climate policy objectives to ensure coherence and predictability.
2. **Revenue Mobilisation and Targeted Allocation:** Unlike Kenya's incentive-only model, Zambia should develop instruments that generate new, earmarked revenues to finance renewable projects transparently.
3. **Administrative Capacity and Predictability:** Following South Africa's model, Zambia's regime should prioritise administrative efficiency, fiscal stability and investor confidence through clear enforceable provisions.

These lessons provide a foundation for developing guiding principles adapted to Zambia's specific institutional and socio-economic context.

4.3 GUIDING PRINCIPLES FOR ZAMBIA'S GREEN TAX FRAMEWORK

Based on the comparative insights and the Zambian institutional context, the following guiding principles should underpin the design of a green tax framework for financing renewable energy in Zambia:

1. **legitimacy and governance** which means that tax must be legally anchored (via statute) and administered by competent, transparent institutions (preferably through authorities like Zambia Revenue Authority). Tax revenues must be earmarked or ring-fenced for renewable energy investment to maintain public trust and confidence.
2. **sustainability and predictability** which means that the tax base, rate and structure must be designed for medium to long term stability so investors in renewables can plan with confidence. Frequent ad hoc changes undermine the investment trust.
3. **Equity and fairness** which means that the burden of the tax should avoid undue regressive impact on low-income households (for example Zambia's new tax

system). Where necessary, compensatory measures or exemptions should be built in.

4. Complementarity and coherence which means that the green tax apparatus should complement existing fiscal incentives (for example, the Zambian zero rating of VAT and customs duty on certain renewable energy equipment) and integrate with the National Energy Policy (2019) and Climate Change Policy (2016) framework.
5. Revenue Effectiveness and Allocation which means that the tax should raise meaningful revenue and there must be transparent mechanisms for allocating and monitoring those revenues in support of renewable energy projects.
6. Simplicity and administrative efficiency which means that given capacity constraints, the tax system should minimise compliance burdens, allow efficient collection and avoid overly complex design that could lead to avoidance or evasion.
7. Flexibility and adaptability which means the framework should allow periodic review to respond to evolving technologies, cost curves and policy priorities without undermining stability.

4.4 POLICY RECOMMENDATIONS

This section outlines detailed recommendations for Zambia's green tax framework, structured in five key dimensions, Zambia should:

a) Legislative and Institutional Reforms

- Enact a Green Tax Act: Zambia should enact a dedicated 'Green Tax Act' which defines one or more green tax instruments (for example, a carbon levy, a fossil-fuel input tax or a renewable energy surcharge) and mandates that revenue be directed toward renewable energy project financing. Embedding the framework in primary legislation will strengthen legitimacy, provide clarity and reduce policy risk.
- Establish a Renewable Energy Fund: The Act should establish a statutory "Renewable Energy Trust Fund" under the joint oversight of the Ministry of Energy (or a designated independent board) responsible for receiving, managing and disbursing green tax

revenues and Ministry of Finance responsible to collect and allocate green tax revenues. This model draws on practices in other countries where ring-fenced funds have improved transparency and investor confidence. Including independent audits to ensure accountability.

- Clarify Institutional responsibility: The tax should be administered by the Zambia Revenue Authority (ZRA) should manage tax collection while Energy Regulation Board (ERB) and the Zambia Development Agency (ZDA) should provide technical oversight and link tax policy with renewable investment planning.
- Introduce a Periodic Review Mechanisms: The Act should mandate a periodic (for example, every three years) review of tax rates, thresholds and use of revenues to allow the regime to adapt to technological change, global conditions and Zambia's renewable energy trajectory.

b) Design of Green Tax Instruments

Zambia's green tax regime should integrate both revenue-raising and incentive-based instruments drawing from South Africa's mixed model:

- Carbon/fossil-fuel input levy: Introduce a levy on fossil-fuel based electricity generation or carbon-dioxide emission tax (for example, diesel, heavy fuel oil). The levy should be calibrated so that it is high enough to raise meaningful revenue but low enough to avoid undue cost burdens on vulnerable sectors.
- Renewables energy investment tax credit/allowance: To mirror the success of the South African scheme, Zambia should extend a tax allowance for renewable energy investment. Following South Africa's Section 12BA, Zambia could allow accelerated depreciation for qualifying renewable assets.
- Enhance import-duty/VAT exemptions: Build on existing Zambian incentives (zero-rating of VAT and customs duty on solar panels, inverters, wind turbines and batteries) but integrate them within the green tax framework as complementary incentives rather than stand-alone.

- Green certification and offset scheme: Establish a green-tax offset certificate regime whereby companies or power producers can invest in specified renewable projects and obtain tax credits and excess credits can be sold.

c) Revenue Allocation and Management

- Ring-fencing and transparency: All revenues from the green tax instruments must flow into the Renewable Energy Trust Fund rather than the general revenue pool. The Fund should publish annual reports on inflows, disbursements and project outcomes. An independent auditor should certify the accounts.
- Project selection and prioritisation: Disbursements from the Fund should be allocated competitively to renewable energy projects (solar, wind, hydro, biomass) prioritised by national need (e.g. grid-connected generation in underserved regions, mini-grid/off-grid for rural access). Selection criteria should emphasise value-for-money, local content, job creation and adherence to environmental/social safeguards.
- Blended financing and leverage: The Fund should leverage its resources by co-financing with development financiers, private equity and green bonds. By lowering risk through tax-based finance, Zambia can attract additional capital from international climate funds, private investors and development banks. The fund should co-finance projects with development partners such as the African Development Bank and the Green Climate Fund using tax-based resources as a catalyst for larger investments.
- Monitoring and evaluation (M&E): The framework must include robust M&E mechanisms to track the effectiveness of tax-raised funds in delivering renewable energy capacity, reducing emissions and increasing access. These metrics should feed into the periodic review mandated by the Act.
- Equity and inclusion: A portion of the Fund's resources should be reserved for rural/remote electrification via off grid renewables and

for households with lower incomes to ensure the green tax regime supports inclusive development.

d) Stakeholder Engagement and Public Awareness

- Public awareness and communication: The government through the Ministry of Energy and the Zambia Revenue Authority, should launch a communication campaign explaining the purpose of the green tax, how revenues will be used and how the public and businesses can benefit. Effective transparency bolsters legitimacy.
- Private-sector collaboration: Engage renewable energy project developers, financial institutions, equipment suppliers and industry associations in the design and implementation of the green tax instruments. Their input ensures the instruments are practical and investment-friendly.
- Civil-society oversight: Establish a Green Tax Advisory panel including NGOs and academic expert to review the Fund's disbursement and project outcomes, thus strengthening accountability and public trust and report to parliament.
- Capacity building: Ensure that ZRA and ERB officers receive training in green tax administration, auditing, environmental finance and compliance monitoring of renewable-energy projects. Capacity constraints must not undermine the regime's credibility.
- Feedback and grievance mechanisms: Introduce channels for stakeholders (especially small-scale operators and rural communities) to submit feedback or complaints regarding project allocation, tax treatment and benefit realisation.

e) Regional and International Cooperation

- Harmonisation with region: Liaise with the Southern African Development Community (SADC) and regional tax/energy bodies to align Zambia's green tax regime with neighbouring countries, promoting cross-border renewables trade, shared infrastructure and regional investors.
- Access to climate finance: By demonstrating domestic fiscal commitment through green taxes, Zambia can enhance its eligibility

for concessional financing from global climate funds. Showing domestic tax mobilisation enhances credibility and unlocks supplemental funding.

- Knowledge and technology exchange: Partnership with Kenya and South Africa can support capacity-building in tax design and green investment management. It could be with other pioneering jurisdictions to exchange expertise on tax instruments design, monitoring and renewable energy deployment.
- Green bond issuance: Explore issuing sovereign or municipal green bonds backed by the green tax revenue stream. A credible, transparent tax-backed stream increases investor confidence and can tap international capital markets.

4.5 IMPLEMENTATION STRATEGIES

To ensure that the recommendations green tax framework becomes operational and effective, the following implementation strategies should be followed:

- Phased introduction: Begin with a pilot green tax instruments (e.g., a modest fossil-fuel levy) tested over an initial 12-24 months. Simultaneously, expand the existing incentive regime (VAT/customs exemptions) and prepare the legislative groundwork for the Green Tax Act.
- Capacity-building plan: Conducts a needs assessment for ZRA, ERB and the Fund secretariat. Provide training in tax administration, audit of renewables projects, fund management, impact evaluation and digital tracking systems.
- Stakeholder consultation: Engage private sector, civil society and international partners before finalising tax rates and allocation rules. Before enactment, hold structured consultations with industry (renewable energy developers, utilities, mining sector) civil society, rural community representatives and international partners to refine instrument design, rate levels and allocation criteria.
- Communication strategy: Launch a public branding campaign (“Green Tax for Clean Energy Zambia”) to communicate the link between the tax and visible renewable energy investments. Highlight success stories to build public acceptance.

- Integration with national energy plan: Align the Fund's disbursement priorities with the Rural Electrification Authority (REA)'s planned projects so that tax funded investments contribute directly to national targets.
- Institutional coordination: Establish a Green Tax Steering Committee chaired by the Ministry of Finance and including ZRA, ERB, ZDA, Ministry of Energy, REA and civil-society representation. The Committee will monitor implementation, resolve issues and report annually to parliament.
- Monitoring and evaluation: The Fund should publish an annual impact Report showing tax revenue collected, allocation by project type/geography, capacity added (MW), emissions reduced (tonnes CO₂), and number of households electrified. The review mechanism in the Act should trigger adjustments based on performance data.
- Risk management: Create a contingency reserve to stabilise fund disbursement during periods of revenue volatility. Also building safeguards to address revenue volatility (e.g. if fossil-fuel inputs decline rapidly, levy revenues may fall), ensure that fund disbursements remain steady and that projects funded deliver credible returns. Create a contingency reserve in the Fund for lean years.

4.6 ANTICIPATED CHALLENGES AND MITIGATION MEASURES

While the proposed framework offers significant promise, several potential challenges and risks must be addresses proactively:

- Industrial resistance: Industries reliant on fossil fuels, utilities accustomed to subsidies tariffs and equipment importers may oppose new tax levies. Mitigation: Engage in early consultation, deliver evidence of fairness, introduce the tax gradually and accompany with incentives for affected sectors to transition.
- Regressive impact: A levy on fuel or electricity tariffs could burden poor households disproportionately. Mitigation: Design a progressive structure (e.g., exemption thresholds, direct subsidies, use part of Fund resources for house-targeted renewable solutions like solar home systems) that use part of revenues for targeted subsidies and off-grid solutions.

- Revenue volatility: Dependence on fuel-based levies exposes revenues to price shocks. Mitigation: Diversity revenue base (e.g., include surcharge on electricity tariffs, green certification fees), establish a reserve fund, and revise rates periodically via built-in review.
- Administrative capacity constraints: Weak enforcement may undermine effectiveness. Mitigation: Invest in training, hire additional staff, explore digital tax administrative system and leverage international technical assistance.
- Risk of fund mismanagement: Without strict governance, funds could be diverted. Mitigation: Enforce audit requirements, publish transparent reports, involve civil-society oversight and tie disbursements to measurable outcomes.
- Investor uncertainty: Investors in renewable energy need policy stability and frequent changes or tax ambiguity could deter capital and discourage investment. Mitigation: Guarantee multi-year commitments and stability, clearly define qualifying assets, publish guidance including applying grandfathering of existing investments.
- Policy overlaps: Overlapping incentives may create inefficiency. Mitigation: Conduct a comprehensive policy mapping exercise and establish a coherent fiscal matrix.

4.7 CONCLUSION

This chapter has developed a comprehensive, contextually grounded blueprint a green tax framework in Zambia aimed at financing renewable energy projects. Anchored in statute, administered transparently and designed to raise dedicated revenue while promoting investment. The proposed framework draws lessons from the more established regimes like Kenya and South Africa and adapts them to Zambia's context. Key to success will be the careful calibration of tax rates, transparent partnership with stakeholders, effective institutional capacity and rigorous monitoring of outcomes. If implemented effectively, Zambia will be well placed to accelerate its renewable-energy rollout, enhance energy security, meet climate commitments and drive sustainable economic growth. As Zambia embarks upon this transition, the proposed green tax regime can serve both as a revenue-mobilisation instrument and as a policy lever for transformation of the energy sector.

The proposed framework satisfies the research objectives by:

1. Establishing the legislative and institutional foundations for a credible green tax regime.
2. Designing balanced tax instruments that both incentivise renewables and generate sustainable revenue.
3. Ensuring transparent and equitable allocation of funds.
4. Embedding robust implementation and accountability mechanisms.
5. Positioning Zambia within a regional and global context of green fiscal reform.

If implemented effectively, the proposed framework can enhance Zambia's fiscal resilience, accelerate renewable energy deployment and solidify the country's transition toward a sustainable low-carbon economy.

CHAPTER FIVE

5.0 CONCLUSION

5.1 INTRODUCTION

This chapter consolidates the main findings of the study, assessing how the research objectives have been met in relation to the broader issue. It addresses the limited empirical knowledge and policy structure regarding the implementation of green taxes as a means of funding renewable energy initiatives in Zambia. The conclusion integrates the comparative and feasibility analyses to offer a cohesive argument on how Zambia can effectively use green taxation to support its sustainable energy and fiscal reform goals.

5.2 SYNTHESIS AND ACHIEVEMENT OF RESEARCH OBJECTIVES

The study aimed to assess whether green taxes can serve as a viable mechanism for financing renewable energy development in Zambia, drawing lessons from Kenya and South Africa. The study had three objectives: to evaluate the effectiveness of green tax policies; to assess Zambia's readiness and feasibility for implementing similar policies and to propose a policy framework that aligns with Zambia's institutional and socio-economic context.

The findings suggest that green taxation has proven effective in Kenya and South Africa when embedded within coherent fiscal and environmental policy system. Kenya's experience with feed-in tariffs and climate levies demonstrates the importance of transparent revenue allocation and consistent political consistency. South Africa's carbon tax, in turn, highlights the significance of integrating green taxes within broader fiscal policy, aligning them with decarbonization and industrial transition strategies.

Applied to Zambia, these lessons reveal both the promise and prerequisites of adopting green taxation. The feasibility assessment showed that Zambia's dependence on hydropower, exposure to climate variability and constrained fiscal space create an urgent need for innovative financing tools. However, successful implementation requires institutional strengthening, policy coherence and public trust in how revenues are managed and utilized. In this sense, the research meets its objectives by confirming that green taxation is feasible in Zambia but only if

accompanied by strong governance reforms and a clearly articulated mechanism for channelling tax proceeds into renewable energy development.

5.3 CONTRIBUTION TO KNOWLEDGE AND POLICY

This dissertation contributes to both academic and policy discussions in multiple ways.

Firstly, it offers an empirically based comparative analysis of African experiences in Kenya and South Africa thereby addressing a significant research gap in the study of environmental fiscal policy in sub-Saharan contexts. Second, it enhances conceptual understanding by linking the theory of green fiscal reform to the practical challenges of implementation in a developing economy. It shows that fiscal instruments can simultaneously generate revenue and promote environmental stewardship when embedded within an integrated governance framework. Third, at a policy level, the research presents a context-sensitive model for Zambia, identifying necessary institutional, legal and administrative reforms to effectively implement green taxes. This model positions green taxation not as an isolated policy innovation but as part of a broader fiscal reform agenda aimed at expanding the country's renewable energy portfolio, mobilizing domestic revenue and aligning national policy with global climate commitments.

Through these contributions, the dissertation provides a foundation for evidence-based policymaking offering insights relevant to the Ministry of Finance, the Ministry of Energy and Zambia's Environmental Management Authority as they explore sustainable financing pathways.

5.4 LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH

While the research offers substantive insights, it is limited by several factors. The analysis relied primarily on secondary data, constraining the ability to qualify potential revenue impacts of proposed green taxes. Additionally, the comparative scope was limited to Kenya and South Africa inclusion of other regional cases such as Rwanda or Ghana could have yielded broader generalizability. Finally, the study's feasibility assessment was conceptual rather than empirical meaning the practical behavioural responses of industries and consumers remain to be tested.

Future research should therefore focus on:

- Empirical modelling of potential revenue and environmental outcomes under different green tax scenarios in Zambia
- Public perception and political economy studies on the acceptability of green taxation
- Regional comparative research to explore harmonization of green fiscal instruments within the Southern African Development Community (SADC).

This kind of research would help make green taxes work better and more fairly in Zambia and other places.

5.5 FORWARD-LOOKING REFLECTION: IMPLICATION FOR ZAMBIA'S POLICY LANDSCAPE

Looking ahead, this study shows that Zambia stands at a strategic juncture in its fiscal and energy reform trajectory. The world is moving toward low-carbon economies which presents both pressure and opportunity, pressure to reduce reliance on donor funding and fossil fuel and opportunity to mobilise domestic resources through innovative fiscal measures. Green taxation, if transparently managed and politically supported can become a cornerstone of Zambia's green fiscal architecture generating revenue for renewable energy investment, incentivizing cleaner production and reinforcing commitments under the Paris Agreement and national climate policies.

The broader implication is that environmental fiscal reform should no longer be treated as peripheral but as an integral part of Zambia's economic modernization agenda. Placing green taxation within public finance management, climate adaptation strategies and energy diversification efforts could yield a triple dividend: environmental protection, fiscal resilience and inclusive growth.

5.6 CONCLUDING REMARKS

In conclusion, this dissertation demonstrates that the feasibility of green taxation in Zambia depends not only on fiscal policy capacity but also on political will, institutional integrity and policy integration. By drawing lessons from regional experiences and adapting them to local realities, Zambia has the potential to transform its tax system into a driver of sustainable energy transformation. This research thus provides both a conceptual and policy roadmap, one that situates green taxation at the heart of Zambia's transition towards a resilient, low-carbon and self-sustaining energy future.

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L400B – DIRECTED RESEARCH (OBLIGATORY ESSAY)

RESEARCH CLEARANCE FORM

NAME: KAMWENGO FRIDAH.....**STUDENT NUMBER:** LLB21211251.....

SUPERVISOR: ...ANDREW CHAKANIKA... **TOPIC:** ... INTERROGATING THE
FEASIBILITY OF GREEN TAXES FOR FINANCING RENEWABLE ENERGY
PROJECT IN ZAMBIA: LESSONS DRAWN FROM KENYA AND SOUTH
AFRICA.....

Stage	Comments	Supervisor's Signature & Date	Student's Signature & Date
Research Proposal	Cleared with minor corrections		22/10/25 F.K
Chapter 1 – Introduction	Candidate had to rework the entire chapter and some comments still remain not addressed		22/10/25 F.K
Chapter 2 –	Cleared after guidance		5/11/25 F.K
Chapter 3 –	Cleared		5/11/25 F.K
Chapter 4 –	Cleared after effecting corrections		5/11/25 F.K
Chapter 5 – Conclusions & Recommendations	Cleared		5/11/25 F.K

Table of Contents, Bibliography and Appendices	Cleared		10/11/25 F.K
First Draft	cleared		10/11/25 F.K
Second Draft	Cleared		10/11/25 F.K
Final Draft	Cleared for final submission		10/11/25 F.K

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