

The Carbon Tax Act 15 of 2019 and the double-dividend hypothesis

by

Adrienne Morgan Greaver

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Supervisors: Prof RCD Franszen and Prof SP van Zyl

Student number: 19386398

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Annexure G

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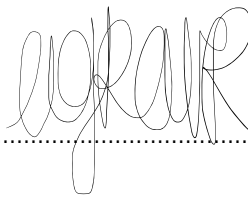
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Acknowledgement

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To my loved ones who supported me unconditionally throughout this incredible journey, thank you, I could not have done this without you.

Abstract

The subject matter of the research conducted in this mini dissertation is carbon tax within South Africa. It investigates the Carbon Tax Act 15 of 2019 to determine whether it is suitable for the South African economy.¹ The tax was implemented in South Africa to send a strong signal to producers and consumers to change their polluting behaviour, reduce their carbon emissions and initiate the transition to a low-carbon economy.² Pigouvian taxes such as carbon tax have the potential to correct market failures and negative externalities by reflecting the true costs of carbon intensive activities in the price of carbon products.³ The ‘double-dividend hypothesis’ is a foundational principle of carbon tax, it assumes that the carbon tax is capable of achieving double and perhaps in special cases triple benefits for the economy and society at large.⁴ Placing a price on carbon emissions increases the price of carbon-intensive goods, consequently polluters are required to pay for their emissions. Decision-making is heavily influenced by price; therefore, the carbon tax corrects the defective behaviour by incentivising the public to consider the cost of carbon emissions going forward. An improvement in environmental outcomes as behavioural patterns change and shift to renewable and greener energy alternatives, and an improvement in economic and social welfare funded by revenue generated from the tax gives rise to the double benefit. The triple benefit comes in where the carbon tax also reduces poverty.⁵ The increase in revenue from carbon tax could improve economic efficiency and reduce the overall burden on the tax system.⁶ The tax will have widespread effects, many of which cannot accurately be predicted before some time has been allowed for it to be operational. This study considers the framework of carbon tax within South Africa and critically evaluates whether it is capable of achieving the double dividend.

¹ Carbon Tax Act 15 of 2019.

² Delport E ‘Creating an Effective and Equitable Legal Carbon Taxing Regime for South Africa’ Principles of Environmental Law Thesis, University of Cape Town, 2017 at 16.

³ Hughes R ‘Critical Review of South Africa’s Future Carbon Tax Regime’ Masters Dissertation, University of Cape Town, 2017 at 12.

⁴ Ndebele Z ‘Taxing Economic “Bads”: The Case for a Carbon Tax in South Africa’ Masters Dissertation, University of KwaZulu- Natal, 2016 at 2 23 24.

⁵ Ndebele Z ‘Taxing Economic “Bads”: The Case for a Carbon Tax in South Africa’ Masters Dissertation, University of KwaZulu- Natal, 2016 at 2 28.

⁶ Fullerton D ‘Environmental Taxes’ National Bureau of Economic Research, 2008 at 2; Hughes R ‘Critical Review of South Africa’s Future Carbon Tax Regime’ Masters Dissertation, University of Cape Town, 2017 at 18 19; Ndebele Z ‘Taxing Economic “Bads”: The Case for a Carbon Tax in South Africa’ Masters Dissertation, University of KwaZulu- Natal, 2016 at 2.

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List of abbreviations

CO2	Carbon Dioxide
CO2e	Carbon Dioxide equivalent
UNFCCC	United Nations Framework Convention on Climate Change
OECD	Organisation for Economic Cooperation and Development
CAC	Command and Control
MBIs	Market Based Instruments
ETS	Emissions Trading Schemes
GHG	Greenhouse gas
SARS	South African Revenue Service
NERSA	National Energy Regulator of South Africa
IRP	Integrated Resource Plan
GDP	Gross Domestic Product
UPGEM	University of Pretoria General Equilibrium Model
VAT	Value-Added Tax
DEA	Department of Environmental Affairs

Chapter 1: Introduction

1. 1 Research Objective

The objective of this study is to consider the newly implemented Carbon Tax Act 15 of 2019 to determine whether it is an effective mechanism to reduce domestic greenhouse gas emissions and mitigate against the onset of extreme climate change events. The study will cover four areas:

Instruments and mechanisms to address negative environmental externalities specifically market-based instruments, and theoretical principles that inform environmental taxation; the Act in the context of South Africa; a critical evaluation of the Act including strengths and weaknesses Act that undermine the potential of a double dividend; and lessons and recommendations that may be compatible and applicable to South Africa.

1. 2 Background of the study

The Carbon Tax Act⁷ — that commenced on 1 June of 2019 – imposes a tax liability on certain taxpayers based upon their carbon dioxide (“CO₂”) equivalent of greenhouse gas emissions and other connected matters. The increase of anthropogenic emissions into the atmosphere is undeniably linked to the cause of climate change as stated in the preamble of the Act.⁸ The introduction of a carbon tax in South Africa was influenced by global climate action to mitigate the onset of climate change and adapt to its effects.⁹ South Africa, a member of the United Nations Framework Convention on Climate Change (UNFCCC), has proven a serious intention to combat climate change by committing to reduce its CO₂ emissions by 34 per cent by 2020 and 42 per cent by 2025.¹⁰ South Africa is a developing country that relies mainly on coal as a primary source of energy, therefore, this is a lofty goal that requires a concerted effort.¹¹ The double-edged sword is that the sectors that are primary

⁷ Carbon Tax Act 15 of 2019 (‘the Act’).

⁸ Carbon Tax Act 15 of 2019.

⁹ The Paris Agreement 2015.

¹⁰ Wills A, letter by Deputy General: International Cooperation Department of Environmental Affairs to Executive Secretary of the United Nations Framework Convention on Climate Change, 2010, United Nations Climate Change online database: <https://unfccc.int/files/meetings/cop_15/copenhagen_accord/application/pdf/southafricacphaccord_app2.pdf> (Accessed 10 June 2019); Van Schalkwyk SG ‘An international comparison of environmental tax with an emphasis on South Africa’ Doctoral thesis, University of Pretoria, 2012.

¹¹ Dippenaar M ‘The role of tax incentives in encouraging energy efficiency in the largest listed South African businesses’ (2018) 21 *South African Journal of Economic and Management Sciences* 1 at 1; Ndebele Z ‘Taxing Economic “Bads”: The Case for a Carbon Tax in South Africa’ Masters Dissertation, University of KwaZulu- Natal, 2016 at 5; Winkler H ‘Reducing energy poverty through carbon tax revenues in South Africa’ (2017) 28 3 *Journal of Energy in Southern Africa* at 61.

drivers of growth in South Africa's economy are also the most harmful in terms of the impact that they have on the environment and the public. Environmental fiscal reform that is initiated by the carbon tax will have an unavoidable impact on carbon-intensive sectors and the poor. A reform that is effective in meeting its objective takes into account the needs and limitations of its economy to not prioritise the environmental objective in a manner that is prejudicial to the progress and development of the society at large.

The objective of the Act is to give domestic effect to South Africa's international climate change mitigation targets, by creating incentives. The intention is to apply formulated tax penalties that are directly linked to taxpayers' carbon emissions to incentivise taxpayers to reduce their carbon emissions. Upon first glance, it may appear pervasive as it increases the average cost of conducting certain activities that are harmful to the environment. Major stakeholders within the economy have shown strong opposition to the tax out of concern that it is likely to disrupt the present structure and balance within the market, harm local and international competition, and its regressive impact will disproportionately affect the poor. This may lead to uncertainty and instability. The energy sector, the mining sector, the industry sector and the transportation sector to name a few are responsible for a significant portion of South Africa's greenhouse gas emissions.

Historically, firms and enterprises competed and generated their profits at the lowest possible cost. Economic discourse has always been based on the assumption that the environment and climate would remain stable over time, despite rapid industrial development. Outdated economic theories and models that informed policies and decision-making consistently neglected to prioritise the impact of greenhouse gas emissions and its consequential effect on the stability of the climate. Generally, market prices are not inclusive of the harm that certain products and services cause to the environment.¹² The hidden cost of harm caused to the environment from commercial activities is borne by the environment and the general public. Excluding the negative impact to the environment creates a market failure. A 'market failure' is characterised as a positive or negative externality. Externalities are created when certain costs and benefits are not included in market prices of goods and/or services, and negative externalities lead to too much of a good or service being supplied and positive externalities lead to underproduction.¹³ Pricing goods and services in a manner that does not include the environmental costs of the good and/or service have led to harmful effects that have

¹² Dippenaar M 'The role of tax incentives in encouraging energy efficiency in the largest listed South African businesses' (2018) 21 *South African Journal of Economic and Management Sciences* 1, at 2.

¹³ Dippenaar M 'The role of tax incentives in encouraging energy efficiency in the largest listed South African businesses' (2018) 21 *South African Journal of Economic and Management Sciences* 1, at 1; National Treasury 'A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform in South Africa' Draft Policy Paper, 2006 at 42.

become increasingly evident over time by an elevation of global temperatures and an increase in the average level of greenhouse gasses in the atmosphere since pre-industrial levels.¹⁴

Pigouvian taxes are corrective, they aim to cure the negative environmental externalities brought about by polluting activities that have gone untaxed.¹⁵ The carbon tax, a Pigouvian tax, ensures that those who have the privilege of polluting the environment are responsible for the costs relating to environmental pollution and degradation, the consequential adverse health effects and the control and minimisation of environmental pollution.¹⁶ The negative environmental externality is then internalised in the price of goods and services by way of the carbon tax. The expectation is that the private and public entities will consider the effect of their operations on the environment when making decisions. Pigouvian or environmental taxes are a form of government intervention that necessitates a shift in commercial and consumer practices towards greener alternatives. Unsurprisingly, the carbon tax has not been received without some resistance from industry groups that are most likely to be negatively affected by it. The economic impact of the tax on these industries can be reduced through effective revenue recycling. Environmentally related taxes are an efficient and cost-effective method to incentivise behavioural change, however it will not be sufficient in meeting the environmental objective alone. Political will and public opinion are important factors that determine the scale of the intervention needed and what the most appropriate measures are in light of the relevant circumstances.¹⁷

1.3 Problem Statement

The changes introduced by the Carbon Tax Act have far-reaching financial implications for polluters and those who consume or utilise goods and/or services that are recognised by the Act as hazardous to the environment. The Act is intended to initiate a change in consumer and commercial behaviour and incentivise a transition to a low carbon economy. The carbon tax provides the government with an additional stream of revenue, the allocation and distribution of which has been emphasised by

¹⁴ Carbon Tax Act 15 of 2019; Hughes R 'Critical Review of South Africa's Future Carbon Tax Regime' Masters Dissertation, University of Cape Town, 2017 at 12.

¹⁵ Ndebele Z 'Taxing Economic "Bads": The Case for a Carbon Tax in South Africa' Masters Dissertation, University of KwaZulu- Natal, 2016 at 16.

¹⁶ Carbon Tax Act 15 of 2019; National Treasury Explanatory Memorandum on the Carbon Tax Bill 2018 at 8; National Treasury 'A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform in South Africa' Draft Policy Paper, 2006 at 69; World Bank Group 'Carbon Tax Guide A Handbook for Policy Makers' International Bank for Reconstruction and Development, Washington DC, 2017 at 33.

¹⁷ Dippenaar M 'The role of tax incentives in encouraging energy efficiency in the largest listed South African businesses' (2018) 21 *South African Journal of Economic and Management Sciences* 1 at 2; Fullerton D 'Environmental Taxes' National Bureau of Economic Research, 2008 at 2; National Treasury 'A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform in South Africa' Draft Policy Paper, 2006 at 60.

various academics as crucial to the success of the tax. It is not an instrument to be created and applied purely as a revenue collecting exercise, this undermines the integrity and purpose of the Act.

The carbon tax is implemented in phase and makes provision for generous allowances and exemptions that in some cases allow taxpayers to reduce their liability up to 95 per cent.¹⁸ This is problematic as it is in direct contrast to the objective of the Act. The legislators' reason that a phased approach and such large allowances give heavy emitters of CO₂ time and opportunity to prepare themselves for the eventual increase of the tax on CO₂ emissions.¹⁹

The problem identified with the Carbon Tax Act is thus twofold:²⁰

First, the provisions and inner workings of the Act seem to lead to a result that may be contradictory to the objectives that it aims to achieve. The initial price of carbon is set too low to have a meaningful effect on reducing CO₂ emissions. In addition, the Act gives unreasonably large allowances to taxpayers that effectively maintains the business-as-usual.

Second, the implementation of the Act itself creates uncertainty. It will be implemented in phases, and the phases are interdependent, as what is entailed in Phase Two is dependent on the outcomes of Phase One. The Carbon Tax Response Document provides that a review of the tax will be conducted after approximately three years of implementation. Therefore, the future course of direction of the carbon tax remains unclear.

1. 4 Research Objective

The focus of the research is to determine whether the newly implemented Carbon Tax Act is conducive to achieving South Africa's emission reduction targets in a manner that does not cause undue hardship to society. The objective of this mini dissertation is to determine whether the tax, the framework and the rates and allowances introduced are reasonable and just in a developing society that values sustainable development and that is still gripped by the historic effects of poverty and inequality. This study is a contribution to the academic literature that deals with the levying of green

¹⁸ S14 Carbon Tax Act 15 of 2019; Hughes R 'Critical Review of South Africa's Future Carbon Tax Regime' Masters Dissertation, University of Cape Town, 2017 at 69; National Treasury Explanatory Memorandum on the Carbon Tax Bill, 2018 at 5.

¹⁹ Standing Committee on Finance (SCOF), Response Document from National Treasury and SARS as presented to SCOF on Carbon Tax Bill Report-back hearings, February 2019 at 6-8.

²⁰ Standing Committee on Finance (SCOF), Response Document from National Treasury and SARS as presented to SCOF on Carbon Tax Bill Report-back hearings, February 2019, 6-8.

taxes, and it assesses the Act to determine whether the action taken by the legislators is significant enough to influence consumer and commercial behaviour that will result in a meaningful reduction of South Africa's CO₂ emissions. The study also considers how the Act will practically affect the domestic economy, poverty and unemployment.

1.5 Motivation

South Africa is a valuable player in the international market due to its capacity to trade in raw materials and non-renewable resources. Industries in agriculture, mining and energy production are amongst the greatest stakeholders in the economy. They contribute to economic growth and development and the reduction of poverty by providing jobs on a large scale that caters to an array of skill levels. However, these industries are also the most intense emitters of CO₂ and other greenhouse gases.²¹ The introduction of the Carbon Tax Act has sparked unease and scepticism by key industry players, as the long-term effect that the Act will have on the economy is uncertain at best. The motivation of this study is to consider the Carbon Tax Act and how it interacts with economic growth and the principle of sustainable development. The study explores the possibility of whether a carbon tax can be used as a policy mechanism to align the socio-economic needs of the country with future economic development that is sustainable.

South Africa's unemployment rate is the highest that it has been since 2003. President Cyril Ramaphosa pledged to boost economic growth to 5 per cent by 2023, however the central bank predicts growth only reaching 2 per cent by 2021.²² These predictions indicate that the future for South African economic conditions is quite bleak. Krugel and Viljoen, opine that "turning the tide on the weak economy is not enough because structural changes such as improving the quality of governance, increasing the level of competition in many industries, more labour market flexibility, and reducing the cost of doing business are needed."²³

The Carbon Tax Act has great potential to alleviate the burdens on society that are created by climate change, environmental degradation, pollution, poverty and unemployment. This kind of policy if

²¹ Hughes R 'Critical Review of South Africa's Future Carbon Tax Regime' Masters Dissertation, University of Cape Town, 2017 at 1-6; Maphosa J 'A Comparative Study of Effectiveness of Green Taxes in South Africa and Developed Countries' Masters Dissertation, University of Pretoria, 2014 at 26-29 101.

²² Naidoo P 'Evidence that shows Ramaphosa has a jobless crisis in SA' 2019 *Moneyweb* available at <<http://www.moneyweb.co.za/news/south-africa/evidence-that-shows-ramaphosa-has-a-jobless-crisis-in-sa/>> (accessed 31 July 2019).

²³ Naidoo P 'Evidence that shows Ramaphosa has a jobless crisis in SA' 2019 *Moneyweb* available at <<http://www.moneyweb.co.za/news/south-africa/evidence-that-shows-ramaphosa-has-a-jobless-crisis-in-sa/>> (accessed 31 July 2019).

utilised effectively may drive a shift towards a green economy and the creation of green jobs that could cater to all skill levels. The need for economic growth does not have to perpetually be balanced against the need for sustainable development if there is a possibility that these needs could be aligned in the future. The underlying motive of this study is to investigate whether the Carbon Tax Act could be used as a mechanism to nudge the South African economy in a direction that envisages economic growth that values and emphasises sustainable development.

1.6 Methodology

This desktop study is a review of existing literature on market-based instruments and carbon taxes as an effective measure to reduce onset climate change and protect the environment upon which mankind depends. The study considers the measures of intervention available to government and the basic principles that are relevant to environmental taxes. The potential effects that may be caused by the carbon tax are examined within the context of South Africa. This is relevant to identify shortcomings within the Act. Finally, the study concludes by providing insight into any areas within the Act that require further refining or improvement.

1.7 Chapter Structure

Chapter 1: The Introduction of the Carbon Tax Act

Chapter 1 introduces the concept of carbon tax and the Carbon Tax Act 15 of 2019.²⁴ This chapter provides the context and extenuating circumstances that brought it into existence in South Africa. The chapter expresses that effective climate action requires some form of international coordination.²⁵ The Paris Agreement ratified by UNFCCC and OECD countries confirms the need for the global community to implement national strategies to mitigate and/or adapt to impending climate change crisis.²⁶ The implementation of the Carbon Tax Act in South Africa is evidence of South Africa's effort to meet its obligation under the Paris Agreement. This chapter briefly states the main areas that will be covered in the argument.

²⁴ Carbon Tax Act 15 of 2019.

²⁵ Das K *et al* 'Making Trade Work for Climate Change' Climate Strategies, 2019 at 6-8.

²⁶ Das K *et al* 'Making Trade Work for Climate Change' Climate Strategies, 2019 at 8-9.

Chapter 2: Theoretical overview of environmentally related taxes

Chapter 2 of the study provides a theoretical framework and a general overview of the relevant literature dealing with market-based instruments, environmentally related taxes and carbon taxes. It aims to provide a summative understanding of the available instruments that address greenhouse gas emissions and the onset of climate change. The discussion in this chapter introduces the concept of market-based instruments that are environmentally related, this chapter also distinguishes between carbon emissions trading systems and environmental taxes. The carbon tax theory, the double-dividend hypothesis and the polluter-pays-principle are discussed, as these are the principles that are the basis of the carbon tax.

Carbon taxes are assessed against a set of established criteria listed in the National Framework Policy: “environmental effectiveness, tax revenue, support for the tax, legislative aspects, technical and administrative viability, competitiveness effects, distributional impacts and adjoining policy areas.” Each of these criteria are investigated in this chapter.

Chapter 3: Carbon tax in the South African context

Chapter 3 considers the South African economy and the newly introduced carbon tax and the interaction between the two. This chapter looks at the current state of the South African economy and the workings of the Carbon Tax Act that apply to polluters in South Africa. The Act is evaluated in this chapter according to the key criteria of assessment of environmentally related taxes listed and explained in Chapter 2. The potential consequences and effects that may be triggered by the Act are highlighted in this section of the study, as it aims to identify shortcomings that require more attention. This chapter explores the suitability of the Carbon Tax Act in a country like South Africa by looking at how its provisions may take hold within the economy.

Chapter 4: Conclusions and recommendations

The study concludes by emphasising the importance of a carbon tax in present-day South Africa. The key findings on the effects of the Act on society and the weaknesses are considered against possible solutions. It is also appropriate to mention in the conclusion, after winding up the findings, that a policy such as carbon tax that requires a fundamental change in the day-to-day behaviour of members of society over time should not be viewed as negative, solely because it requires society to change. The objective of the carbon tax is to reduce carbon emissions by creating an incentive for taxpayers

to refrain from engaging in processes that cause harm to the environment. The carbon tax alone will not suffice in meeting this objective. Additional adjoining policies that support the objective of the carbon tax are necessary for the success of the intervention.

Chapter 2: The theoretical framework of market-based instruments and environmentally related taxes

2.1 Introduction

This chapter provides a theoretical framework of market-based instruments, specifically environmentally related taxes and carbon taxes. The discussion begins by identifying and contextualising internationally accepted measures and interventions that address the mitigation of and/or adaptation to climate change. Direct regulatory measures are briefly considered before market or incentive-based measures. The market-based instruments that are discussed in this chapter are carbon emissions trading schemes and environmental taxes. The double-dividend hypothesis that underpins the carbon tax is outlined before the explanation of each key criterion on the assessment of environmentally related taxes. The criteria identified by National Treasury are “environmental effectiveness, tax revenue, support for the tax, legislative aspects, technical and administrative viability, competitiveness effects and adjoining policy areas.”

2.2 Policy instruments to address climate change

The use of policy instruments to decelerate the effects of climate change has become prevalent in recent years as the threat of climate change becomes more of a present-day reality.²⁷ The growing international consensus is that climate change poses the greatest threat to the stability of the modern world.²⁸ It is difficult to predict with accuracy precisely how climate change will affect the global economy in the long term. What is known is that developing countries are the most at risk of the adverse and unpredictable effects associated with climate change. South Africa is the heaviest emitter of greenhouse gases in Africa and within the top 20 in the world; it is also a developing middle-income country that is facing a unique set of obstacles in addition to climate change.²⁹ The costs associated with adapting to climate change strengthen the argument that mitigation is preferable to adaptation. Environmental policy instruments geared towards reducing greenhouse gas emissions are necessary for effective environmental reform. Instruments that address anthropogenic greenhouse gas

²⁷ Ndebele Z ‘Taxing Economic “Bads”: The Case for a Carbon Tax in South Africa’ Masters Dissertation, University of KwaZulu- Natal, 2016 at 22; Paterson AR ‘Pruning the Money-Tree to Ensure Sustainable Growth: Facilitating Sustainable Development through Market-Based Instruments’ (2006) 9 *Potchefstroom Electronic Law Journal* 3 at 89-90.

²⁸ Hughes R ‘Critical Review of South Africa’s Future Carbon Tax Regime’ Masters Dissertation, University of Cape Town, 2017 at 10-12.

²⁹ Maphosa J ‘A Comparative Study of Effectiveness of Green Taxes in South Africa and Developed Countries’ Masters Dissertation, University of Pretoria, 2014 at 26.

emissions generally include direct regulatory measures or ‘command-and-control’ instruments and incentive-based instruments such as environmental taxes and emissions trading schemes.

2.3 Direct Regulatory Instruments

Direct regulatory instruments or command-and-control (“CAC”) regulations involve the enactment of laws that identify, define and restrict undesirable or problematic behaviour and enforcement mechanisms to ensure that the enacted law is observed.³⁰ Framework legislation aims to define the overarching and generic principles that apply to sectoral-specific legislation. The basis for this approach is that human behaviour that negatively impacts the environment should be regulated by providing clearly stated legislative norms and standards, prohibitions, limitations and measures that sanction and deter non-compliance.³¹ CAC addresses negative behaviour directly by placing restrictions at the source of the problem.³² The National Environmental Management Act 107 of 1998 is an example of direct regulation that provides for cooperative environmental governance and establishes guiding principles for decision-making on matters that affect the environment. It appears to be a simplistic and straightforward system to implement and maintain, however this method is not the most appropriate to encourage a widespread transition to low carbon ‘green economy’. This approach merely restricts unwanted behaviour through legislative intervention, and defaulters are generally subjected to penalties in the form of fines. This may be effective in sending a clear message to the public, but it does not encourage or incentivise innovation and technological advancement. CAC places a greater emphasis on control and restriction, and it is more suited to situations that require more urgent attention and stricter control, such as wildlife and biodiversity conservation. It is not suitable for encouraging dynamic and inclusive growth and reform of a sustainable economy because there is little incentive to go beyond compliance.³³

Direct regulation is also costly in terms of administration and enforcement measures. It requires a great deal of cooperative governance between sectors and ministries to ensure that compliance is

³⁰ Hughes R ‘Critical Review of South Africa’s Future Carbon Tax Regime’ Masters Dissertation, University of Cape Town, 2017 at 9; Delport E ‘Creating an Effective and Equitable Legal Carbon Taxing Regime for South Africa’ Principles of Environmental Law Thesis, University of Cape Town, 2017 at 7-8; Ndebele Z ‘Taxing Economic “Bads”: The Case for a Carbon Tax in South Africa’ Masters Dissertation, University of KwaZulu- Natal, 2016 at 14.

³¹ Hughes R ‘Critical Review of South Africa’s Future Carbon Tax Regime’ Masters Dissertation, University of Cape Town, 2017 at 9; Delport E ‘Creating an Effective and Equitable Legal Carbon Taxing Regime for South Africa’ Principles of Environmental Law Thesis, University of Cape Town, 2017 at 7-8; Paterson AR ‘Pruning the Money-Tree to Ensure Sustainable Growth: Facilitating Sustainable Development through Market-Based Instruments’ (2006) 9 *Potchefstroom Electronic Law Journal* 3 at 88.

³² Hughes R ‘Critical Review of South Africa’s Future Carbon Tax Regime’ Masters Dissertation, University of Cape Town, 2017 at 9.

³³ Davis Tax Committee ‘Carbon Tax Report: November 2015’ at 5.

maintained. Legislative standards that are applied on a generic basis may not make adequate provision for case-by-case differences in circumstances that may arise.³⁴ Hughes argues that general public support for environmental regulations for the majority of stakeholders in an economy is necessary for the intervention to be effective in its purpose.³⁵ The inflexibility of generally legislated norms and standards does not support this principle because every interaction is unique to its circumstances. CAC in essence lacks the flexibility to address environmental concerns on the merits of each case. It is an effecting tool to be utilised in conjunction with other measures.

2.4 Market-Based Instruments

Market-based instruments (“MBIs”) indirectly change taxpayer behaviour by regulating the price and/or quantity of a good.³⁶ The purpose of MBIs is to correct market failures, it increases the relative price of overproduced carbon-intensive good and creates strong incentives that discourage carbon-intensive consumer and producer behaviour.³⁷ As stated above, MBIs are based either on price, in the form of environmental taxes, or quantity, through Cap-and-Trade and Emissions Trading Schemes (“ETS”). MBIs are cost-saving because they require less governmental interference to enforce than compared to command-and-control measures. MBIs rely primarily on incentives to encourage behavioural changes.

2.4.1 Cap and Trade or Emissions Trading Systems

The Cap-and-Trade or Emissions Trading Systems (“ETS”) are examples of quantity instruments, they set a ‘cap’ or limit on the total emissions allowable, and this is then expressed in the form of allowances or credits that can be traded in the economy. This system indirectly prices greenhouse gas emissions by allowing free-market principles to determine the price as emitters trade their rights,

³⁴ Hughes R ‘Critical Review of South Africa’s Future Carbon Tax Regime’ Masters Dissertation, University of Cape Town, 2017 at 9 10; World Bank Group ‘*A Carbon Tax Guide: A Handbook for Policy Makers*’ (2017) at 34; Ndebele Z ‘Taxing Economic “Bads”: The Case for a Carbon Tax in South Africa’ Masters Dissertation, University of KwaZulu-Natal, 2016 at 14.

³⁵ Hughes R ‘Critical Review of South Africa’s Future Carbon Tax Regime’ Masters Dissertation, University of Cape Town, 2017 at 9-10 20; Ndebele Z ‘Taxing Economic “Bads”: The Case for a Carbon Tax in South Africa’ Masters Dissertation, University of KwaZulu- Natal, 2016 at 14.

³⁶ Hughes R ‘Critical Review of South Africa’s Future Carbon Tax Regime’ Masters Dissertation, University of Cape Town, 2017 at 9 10 11; Hagan L ‘Current Issues in Sustainable Development: The Carbon Tax and Sustainable Development’, 2017 at 9 10.

³⁷ National Treasury ‘A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform in South Africa’ Draft Policy Paper, 2006 at 139; Hagan L ‘Current Issues in Sustainable Development: The Carbon Tax and Sustainable Development’, 2017 at 9 10; Paterson AR ‘Pruning the Money-Tree to Ensure Sustainable Growth: Facilitating Sustainable Development through Market-Based Instruments’ (2006) 9 *Potchefstroom Electronic Law Journal* 3 at 89 90.

allowances and credits.³⁸ This system was introduced to the European Union in 2005 covering approximately 45 per cent of greenhouse gas emissions.³⁹ ETS are also in effect in Alberta, Canada, and several locally implemented pilot cap-and-trade schemes are also in operation in China.⁴⁰ This approach is effective when implemented in an economy with many entities that are participating in the trading system and where there is sufficient trading volume. The oligopolistic market structures that exist in the South African economy specifically the energy sector makes such a system incompatible. The discussion of ETS is therefore limited to this section, but it is worth mentioning as a recognised and popular alternative to environmental taxes.

2.4.2 Environmental Taxes (as a market-based instrument)

Environmentally related taxes are inherently more flexible than command-and-control and the cap-and-trade or emissions trading system. According to the National Treasury's Framework Policy Paper, it is "a tax whose base is a physical unit (or proxy of it) that has a proven significant negative impact on the environment."⁴¹ The rationale for increasing the cost of polluting activities is that it corrects the market failures caused by negative environmental externalities. The environmental and social harm caused by greenhouse gas emissions is internalised and reflected in the price of carbon-intensive goods and services. A clear market signal is created for producers and consumers to consider the financial implications and costs of their activities on the environment when making decisions.⁴² The ability of an environmentally related tax to change taxpayer behaviour depends on the price

³⁸ David Tax Committee: Carbon Tax Report: November 2015, 7; McCoy B 'The Price of Carbon: Politics and Equity of Carbon Taxes in the Middle-Income Countries of South Africa and Mexico' 2015, *Honours Projects*. 31 at 5-11; Ndebele Z 'Taxing Economic "Bads": The Case for a Carbon Tax in South Africa' Masters Dissertation, University of KwaZulu-Natal, 2016 at 15.

³⁹ Delpont E 'Creating an Effective and Equitable Legal Carbon Taxing Regime for South Africa' Principles of Environmental Law Thesis, University of Cape Town, 2017 at 9-10; McCoy B 'The Price of Carbon: Politics and Equity of Carbon Taxes in the Middle-Income Countries of South Africa and Mexico' 2015, *Honours Projects*. 31, 5-11 Ndebele Z 'Taxing Economic "Bads": The Case for a Carbon Tax in South Africa' Masters Dissertation, University of KwaZulu-Natal, 2016 at 15.

⁴⁰ David Tax Committee: Carbon Tax Report: November 2015 at 6; Munnings C, Morgenstern R, Wang Z and Liu X 'Assessing the design of three pilot programs for carbon trading in China' *Resource for the Future Discussion Paper*, 2014 at 1.

⁴¹ National Treasury 'A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform in South Africa' Draft Policy Paper, 2006 at iii vii 3; OECD 'Evaluating Economic Instruments for Environmental Policies', Paris, 2017, available at <https://www.oecd.org/environment/tools-evaluation/PINE_database_brochure.pdf> (accessed 31 July 2019); Hughes R 'Critical Review of South Africa's Future Carbon Tax Regime' Masters Dissertation, University of Cape Town, 2017 at 12 14 15.

⁴² Hughes R 'Critical Review of South Africa's Future Carbon Tax Regime' Masters Dissertation, University of Cape Town, 2017 at 14 15; Nahman A et al 'Market-based instruments in South Africa: a review' (2008) 108 *Council for Scientific and Industrial Research South Africa*, WIT Transaction on Ecology and the Environment at 139.

elasticity of demand for the relevant good or service being taxed.⁴³ The more inelastic the price of demand, the greater probability of the environmental tax leading to a decrease in consumption of the good.⁴⁴ The demand for carbon-intensive goods and fossil fuel energy resources is firmly inelastic, and modern-day dependence on non-renewable resources makes environmentally related taxes well-suited to encouraging a widespread reduction in greenhouse gas emissions and other forms of harmful pollution.⁴⁵

Governments implement environmental taxes to achieve a number of objectives, which could be to achieve a certain level of emissions reduction, raise a certain quantity of revenue or address social costs brought about by greenhouse gas emissions and environmental degradation.⁴⁶ The best design of an environmental tax policy depends on the specific circumstances applicable within the jurisdiction. As it is not a one-size-fits-all system the emissions profile and the dynamic and economic structures of major carbon-intensive sectors should be understood before an environmental tax policy can be deemed to be appropriate.⁴⁷ In time the increased costs brought about by environmental tax will encourage taxpayers to invest in cleaner energy, and to become more competitive and innovative on a low carbon and sustainable path.⁴⁸ The framework policy published by National Treasury on environmental reform states that the criteria which carbon taxes are to be evaluated against are “environmental effectiveness, tax revenue, support for the tax, legislative aspects, technical and administrative viability, competitiveness effects, distributional impacts and adjoining policy areas.”⁴⁹

2.5 The Carbon Tax

The main difference between the ETS and carbon tax is that with ETS the government decides upon the total quantity of emissions permissible and then allows firms to act through the market to determine the price of the right to emit. With the carbon tax, the government determines the price of

⁴³ National Treasury ‘A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform in South Africa’ Draft Policy Paper, 2006 at 39; Miller S & Vela M ‘Are environmentally related taxes effective?’ 2013 at 5.

⁴⁴ National Treasury ‘A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform in South Africa’ Draft Policy Paper, 2006 at 39.

⁴⁵ National Treasury ‘A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform in South Africa’ Draft Policy Paper, 2006 at 6.

⁴⁶ World Bank Group ‘A Carbon Tax Guide: A Handbook for Policy Makers’ (2017) at 16.

⁴⁷ World Bank Group ‘A Carbon Tax Guide: A Handbook for Policy Makers’ (2017) at 16.

⁴⁸ Delpont E ‘Creating an Effective and Equitable Legal Carbon Taxing Regime for South Africa’ Principles of Environmental Law Thesis, University of Cape Town, 2017 at 9; World Bank Group ‘A Carbon Tax Guide: A Handbook for Policy Makers’ (2017) at 33.

⁴⁹ Hughes R ‘Critical Review of South Africa’s Future Carbon Tax Regime’ Masters Dissertation, University of Cape Town, 2017 at 16-27 47-67; National Treasury ‘Chapter 5: Criteria for Assessing environmentally related Taxes’ in *A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform South Africa*, 2006 at 56-64.

emissions and taxpayers decide how much carbon they emit.⁵⁰ It utilises the price mechanism by attaching a monetary value to the CO₂ equivalent of greenhouse gas emissions of an enterprise to change taxpayer behaviour and raise revenue.⁵¹ The carbon tax affords private entities the widest discretion regarding how they achieve their environmental goals.⁵² The freedom afforded to private firms to determine their own emissions trajectory is rooted within the ‘polluter-pays’ principle, and the polluter is the entity responsible for causing an environmental externality and should be required to carry the cost of internalising it.⁵³ The economic burden of reducing greenhouse gas emissions and pollution should therefore rest with the polluter. Under a carbon tax, the polluter is required to pay for both the cost of abatement of greenhouse gas emissions and the unabated emissions costs. In other words, taxpayers are required to pay for the cost of reducing their greenhouse emissions as well as the cost of those emissions that were not reduced.

2.5.1 Double-Dividend Hypothesis

Fullerton suggests that environmental taxes are capable of achieving a dual benefit creating an effect known as a double dividend.⁵⁴ The first dividend is the environmental benefit, the carbon tax causes a reduction in anthropogenic GHG emissions into the atmosphere as polluters are required to pay. It addresses the negative externality of pollution and environmental degradation by ensuring that consider the cost of the harm that they cause to the environment in all aspects of commerce.⁵⁵ The second dividend is a financial benefit that improves economic efficacy. The revenue generated by the carbon tax could be used to strengthen the economy and improve welfare. Carbon tax revenue can be used to decrease other distortionary taxes such as that on income and labour, it can also be used in targeted expenditure programs that protect the poor and most vulnerable to climate change and the immediate impact of the carbon tax.⁵⁶ The strong double-dividend hypothesis prioritises the environmental benefit as the primary objective of the carbon tax; environmental tax policies are to be

⁵⁰ World Bank Group ‘*A Carbon Tax Guide: A Handbook for Policy Makers*’ (2017) at 33.

⁵¹ National Treasury ‘A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform South Africa, 2006 at 39; OECD ‘Environmentally-related Taxes in OECD Countries: Issues and Strategies’, 2001 OECD Paris available at <<https://www.oecd.org/env/tools-evaluation/2385291.pdf>> (accessed 5 September 2019).

⁵² World Bank Group ‘*A Carbon Tax Guide: A Handbook for Policy Makers*’ (2017) at 16.

⁵³ Fullerton D & Metcalf G ‘Environmental taxes and the double-dividend hypothesis: Did you expect something for nothing?’ (No. w6199). National bureau of economic research, 1997 at 2; National Treasury ‘A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform in South Africa’ Draft Policy Paper, 2006 at 69; Ndebele Z ‘Taxing Economic “Bads”’: The Case for a Carbon Tax in South Africa’ Masters Dissertation, University of KwaZulu-Natal, 2016 at 37.

⁵⁴ Fullerton D & Metcalf G ‘Environmental taxes and the double-dividend hypothesis: Did you expect something for nothing?’ (No. w6199). National bureau of economic research, 1997 at 2.

⁵⁵ Ndebele Z ‘Taxing Economic “Bads”’: The Case for a Carbon Tax in South Africa’ Masters Dissertation, University of KwaZulu-Natal, 2016 at 2; Miller S & Vela M ‘Are environmentally related taxes effective?’, 2013 at 5 6.

⁵⁶ Ndebele Z ‘Taxing Economic “Bads”’: The Case for a Carbon Tax in South Africa’ Masters Dissertation, University of KwaZulu-Natal, 2016 at 2.

constructed in a manner that is conducive to securing the environmental objective.⁵⁷ A weak double-dividend hypothesis views the use of carbon tax as a method to create an additional revenue stream for government; carbon tax increases economic efficiency and simultaneously leads to a reduction in greenhouse gas emissions.⁵⁸ The ‘weakness’ of this view is that the importance of environmental economic reform is not emphasised as the primary goal. It has been argued that total reliance on the double-dividend hypothesis of environmental taxes as a general principle of the application is not a complete solution for climate change mitigation strategy.⁵⁹ A carbon tax should be constructed in a manner that is suitable to the tax base it regulates and applied in addition to a range of other government interventions.

2.6 Environmental Effectiveness

The ‘environmental effectiveness of environmental tax and/or policy instruments’ refers to the capability of the particular instrument to achieve an environmental objective such as a reduction in GHG emissions.⁶⁰ The tax must be well-targeted to a clear environmental objective.⁶¹ A direct link between the environmental issue and the tax should be established, and where no direct link can be made the closest indirect link is to be used. The objective is to initiate a gradual transition from a carbon-intensive economy to a low carbon sustainable economy. In certain circumstances, incentives can influence taxpayer behaviour; where a direct link between the tax and the environmental issue can be found the objective is more achievable and unintended consequences can be kept to a minimum.⁶² For the objective of the carbon tax to be met it must be environmentally effective and the design of the carbon tax policy should be best suited to the tax base and the economy it regulates. Exemptions and allowances should be kept to a minimum to ensure that the unfavourable incentives are avoided and the effectiveness of the tax is not undermined.⁶³ Certain concessions are unavoidable

⁵⁷ Fullerton D, Leicester A, Smith S ‘Environmental taxes’ National bureau of economic research; 2008 at 14; Ndebele Z ‘Taxing Economic “Bads”: The Case for a Carbon Tax in South Africa’ Masters Dissertation, University of KwaZulu-Natal, 2016 at 23-26.

⁵⁸ Fullerton D, Leicester A, Smith S ‘Environmental taxes’ National bureau of economic research; 2008 at 14.

⁵⁹ Fullerton D, Leicester A, Smith S ‘Environmental taxes’ National bureau of economic research; 2008 at 14; Ndebele Z ‘Taxing Economic “Bads”: The Case for a Carbon Tax in South Africa’ Masters Dissertation, University of KwaZulu-Natal, 2016 at 23 25 26.

⁶⁰ Hughes R ‘Critical Review of South Africa’s Future Carbon Tax Regime’ Masters Dissertation, University of Cape Town, 2017 at 16; National Treasury ‘A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform in South Africa’ Draft Policy Paper, 2006 at 59.

⁶¹ National Treasury ‘A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform in South Africa’ Draft Policy Paper, 2006 at 59.

⁶² National Treasury ‘A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform in South Africa’ Draft Policy Paper, 2006 at 59.

⁶³ Hughes R ‘Critical Review of South Africa’s Future Carbon Tax Regime’ Masters Dissertation, University of Cape Town, 2017 at 17 47; Ndebele Z ‘Taxing Economic “Bads”: The Case for a Carbon Tax in South Africa’ Masters Dissertation, University of KwaZulu-Natal, 2016 at 2.

such as the gradual phasing-in of the tax to allow the economy time to adjust, certain allowances that protect carbon-intensive industries that are trade-exposed and exemptions of renewable energy consumption due to the environmental advantages it possesses.⁶⁴ Also, the rate of tax that is to be applied should not be set too low that it does not influence private decision-making and it also should not be set too high that it poses a financial risk to the economy.

2.7 Tax Revenue

Pricing carbon creates an additional stream of revenue for the government. The potential to raise revenue through carbon taxes is due to the price inelasticity of demand for carbon-intensive goods and services such as energy and transportation.⁶⁵ In the 2013 proposal of a carbon tax, the revenues were estimated to be around R8 to R30 Billion, making it a potentially considerable contributor to government spending.⁶⁶ Higher levels of revenue from carbon tax are linked to with more significant decrease in the CO₂ emissions per capita, fossil energy consumption and water pollution.⁶⁷ Also higher levels of revenue are associated with increased forest area and electricity from renewable energy sources. However, fixing a price on nature is complex because it is difficult to determine with certainty the exact monetary value of environmental harm.⁶⁸ Where the price is set too high it may be overburdensome for industries and firms to cope, which could lead to other negative and unforeseen consequences such as tax avoidance and evasion and carbon leakage. Where the price is set too low it may not achieve the objective of a net reduction in emissions, because it does not send a strong enough price signal to change consumer-producer behaviour. The tax should therefore be set at a rate that reflects the external environmental cost of CO₂ emissions whilst also taking into account the limitations on the specific economy in which it operates. A carbon intensive economy has a greater potential to generate carbon tax revenue, however, a tax rate set too high in these circumstances could be detrimental to the survival of such an economy due to the regressivity of the tax. Therefore, a balance must be struck between setting a tax rate that is high enough to influence producer and consumer behaviour in a significant way and setting a rate that also protects the viability of the current economic structures to facilitate a smooth transition.

⁶⁴ National Treasury 'A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform in South Africa' Draft Policy Paper, 2006 at 59.

⁶⁵ Hughes R 'Critical Review of South Africa's Future Carbon Tax Regime' Masters Dissertation, University of Cape Town, 2017 at 18; Ndebele Z 'Taxing Economic "Bads": The Case for a Carbon Tax in South Africa' Masters Dissertation, University of KwaZulu-Natal, 2016 at 2 4-5 43 48 55.

⁶⁶ Nakhooda S 'Carbon Taxes in South Africa: The political and technical challenges of pricing carbon' ODI Working Paper 399, 2014 at 3; National Treasury 'A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform South Africa 2006' at 10 12 20 22 41-42.

⁶⁷ Miller S & Vela M 'Are environmentally related taxes effective?', 2013 at 11.

⁶⁸ Hughes R 'Critical Review of South Africa's Future Carbon Tax Regime' Masters Dissertation, University of Cape Town, 2017 at 17.

The application and distribution of revenue is an integral part of environmental tax reform.⁶⁹ The allocation and utilisation of the funds are emphasised as a crucial component to the operational success of the tax. It is not favourable for the carbon tax revenue to form part of general government spending.⁷⁰ This is because environmental reform requires more than placing a price on carbon. It requires a proactive multidisciplinary approach that uses the financial gain to advance the objectives of the tax, taking into account current socioeconomic limitations.⁷¹ The revenue from a carbon tax can generally be spent in four different ways. First, it can accrue to the national fiscus and form a part of general government spending, and second, the revenue that is generated from levying carbon tax can accrue to the national fiscus to be used as a ‘tax shifting’ exercise to reduce other distortionary taxes such as income and corporate taxes.⁷² Tax shifting could alleviate the burdens on industries exposed to the adverse effects of the Act, and subsidise increased access to basic free energy for the poor.⁷³ Third, the revenue can be explicitly earmarked or ring-fenced for specific environmental purposes, and the fourth use of carbon tax revenue is a less stringent form of the third where the revenue is partially earmarked to increase government spending in environmental programmes.

Carbon tax policy and revenue expenditure should be flexible and adaptable to the needs and circumstances that may arise as a result of the intervention. Explicit or full earmarking by strictly allocating finance and resources for specifically named environmental programmes is undesirable as it is the most restrictive, it does not consider other areas where resources could be more efficiently applied.⁷⁴ Implicit or ‘soft’ earmarking or ‘green spending’, according to Maphosa, provides an appropriate degree of flexibility, revenues are allocated to enhance environmental reform in a number of areas where they are most needed. With this approach, the carbon tax revenues accrue to the fiscus, and some form of agreement mandates that spending on environmental programmes will be

⁶⁹ Hughes R ‘Critical Review of South Africa’s Future Carbon Tax Regime’ Masters Dissertation, University of Cape Town, 2017 at 17.

⁷⁰ National Treasury ‘A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform in South Africa’ Draft Policy Paper, 2006 at 60; Winkler H ‘Reducing energy poverty through carbon tax revenues in South Africa’ (2017) 28 3 *Journal of Energy in Southern Africa* at 22.

⁷¹ Hughes R ‘Critical Review of South Africa’s Future Carbon Tax Regime’ Masters Dissertation, University of Cape Town, 2017 at 41-42.

⁷² Tax shifting ‘is the idea that taxing economic ‘bads’ such as environmental pollution and reducing taxes on ‘goods’ such as labour will lead to improvement of environmental quality and increased economic efficiency and employment. National Treasury ‘A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform in South Africa’ Draft Policy Paper, 2006 at 6.

⁷³ Winkler H ‘Reducing energy poverty through carbon tax revenues in South Africa’ (2017) 28 3 *Journal of Energy in Southern Africa* at 20 22.

⁷⁴ ‘Earmarked tax’ is a tax, the revenues from which are used to finance a specific activity or programme’. National Treasury ‘A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform in South Africa’ Draft Policy Paper, 2006 at 5; Winkler H ‘Reducing energy poverty through carbon tax revenues in South Africa’ (2017) 28 3 *Journal of Energy in Southern Africa* at 22; Hughes R ‘Critical Review of South Africa’s Future Carbon Tax Regime’ Masters Dissertation, University of Cape Town, 2017 at 19.

prioritised and increased.⁷⁵ Carbon tax revenues are reserved for spending within a limited number of circumstances that have to do with the advancement of environmental reform.

2.8 Support for the tax

Taxes are necessary to provide finance for government activities and for the provision of public goods and services, taxes are also useful to influence behavioural change. Despite this they do not always generate the support that they need.⁷⁶ The framework policy for environmental fiscal reform states that with every reform there will be winners and losers; and that it is important to identify who these stakeholders are and involve them during the planning, implementation and assessment processes.⁷⁷ Environmental tax reform is more effective if it is created within a context where there is widespread public and political support and understanding of the tax.⁷⁸ Those who are liable for the tax are more likely to comply with the provisions where they support the tax or where there is a lack of opposition to it.⁷⁹ Delpont suggests that “any government intervention or legislative reform requires the support of the population and those most likely to be affected by the said intervention.”⁸⁰ To achieve this support, the intervention imposed should take into account the current state of the economy, its needs and limitations. Then a balance should be struck between the importance of addressing the emissions rate of greenhouse gasses into the environment and what is reasonable and just in the light of the prevailing context and circumstances within the economy. The intervention is likely to gain support if those most vulnerable are protected, in this case it is carbon intensive industries and the poor who lack adequate access to basic energy.

The tax rate is a factor that is closely related to support for the tax. A low tax rate will be preferable to taxpayers that are the heaviest of polluters as the financial burden imposed is less likely to be a major disruption to business-as-usual. However, this does not support environmental effectiveness and it does not incentivise a transition to or an innovation of low carbon alternatives. Conversely, a tax rate that is set too high prioritises urgency of environmental reform and is favourable to low-

⁷⁵ National Treasury ‘A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform in South Africa’ Draft Policy Paper, 2006 at 5.

⁷⁶ National Treasury ‘A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform in South Africa’ Draft Policy Paper, 2006 at vii.

⁷⁷ National Treasury ‘A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform in South Africa’ Draft Policy Paper, 2006 at vii.

⁷⁸ Delpont E ‘Creating an Effective and Equitable Legal Carbon Taxing Regime for South Africa’ Principles of Environmental Law Thesis, University of Cape Town, 2017 at 37.

⁷⁹ Delpont E ‘Creating an Effective and Equitable Legal Carbon Taxing Regime for South Africa’ Principles of Environmental Law Thesis, University of Cape Town, 2017 at 37; National Treasury ‘A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform in South Africa’ Draft Policy Paper, 2006 at 60.

⁸⁰ Delpont E ‘Creating an Effective and Equitable Legal Carbon Taxing Regime for South Africa’ Principles of Environmental Law Thesis, University of Cape Town, 2017 at 37.

carbon and sustainable industries that are seeking entry to the market but may be detrimental to the carbon economy.

2.9 Legislative Aspects

The legal framework for environmental tax legislation should contain provisions for a tax base, taxpayers, the utilisation of tax revenues by government, administration, monitoring and enforcement.⁸¹ Environmental taxes involve environmental and fiscal interests, environmental objectives are integrated with the imposition of tax to achieve a particular outcome – the reduction of greenhouse gas emissions and increased economic efficiency. Legislative alignment between the financial and environmental departments is necessary to effectively administer laws. The use of existing tax authorities and the minimising the number of collection points is the most efficient and cost-effective approach.⁸² National Treasury together with the Minister of Finance and the South African Revenue Service (‘SARS’) are the responsible authorities concerning tax legislation. National Treasury published the 2011 and 2013 Carbon Tax Policy papers and the Framework for assessing environmentally related taxes.⁸³ This led to the creation of the Draft Carbon Tax Bill on 2 November 2015, and the 2016 Draft Regulations for Carbon Offsets. Therefore, the National Treasury has maintained a prevalent hand throughout the construction of South Africa’s carbon tax regime. A reliable system for monitoring and reporting the concentration of greenhouse gases will be necessary to track the progress of the tax and determine whether adjustments should be made. Independent auditors are recommended to confirm the authenticity and reliability of the collected data. Compliance and enforcement provisions are also necessary to secure adherence to the carbon tax legislative framework and to achieve its environmental and fiscal objectives.

Environmentally related taxes rely on different tax legislation. Direct tax interventions are regulated by direct tax legislations such as the Income Tax Act 58 of 1962; indirect tax measures are regulated by indirect tax legislation such as the Customs and Excise Act 91 of 1964. The carbon tax is regulated by both direct and indirect legislation. The Carbon Tax Act 15 of 2019 is direct regulation that prescribes the legislative norms and standards for the carbon tax; the Customs and Excise Act 91 of

⁸¹ Hughes R ‘Critical Review of South Africa’s Future Carbon Tax Regime’ Masters Dissertation, University of Cape Town, 2017 at 21.

⁸² Hughes R ‘Critical Review of South Africa’s Future Carbon Tax Regime’ Masters Dissertation, University of Cape Town, 2017 at 21; Slemrod J & Yitzhaki D ‘Tax Avoidance, Evasion, and Administration’ in Auerbach AJ & Feldstein M (eds) *Handbook of Public Economics* (2002) Elsevier Science 1450.

⁸³ Delpont E ‘Creating an Effective and Equitable Legal Carbon Taxing Regime for South Africa’ Principles of Environmental Law Thesis, University of Cape Town, 2017 at 37.

1964 is the indirect legislation that provides for the administration of the carbon tax.⁸⁴ Environmentally related tax measures must be compatible with World Trade Organisation (WTO) rules and on-going harmonisation efforts within the Southern African region and through the South African Development Community (SADC).⁸⁵

2.10 Technical and Administrative Feasibility

Some of the most challenging aspects relating to environmentally related taxes are technical and administrative issues. Technical and administrative feasibility pertains to defining the taxable commodity, setting the tax rate, tax avoidance and evasion, collection costs and compliance costs.⁸⁶ The taxable commodity and the environmental objective must be identified and defined.⁸⁷ The tax base should be as closely aligned to the environmental objective sought as possible.⁸⁸ The manner in which the environmental objective is to be achieved is with the application of a tax rate that will raise revenues, encourage the development of low carbon technology and ultimately reduce GHG emissions.⁸⁹ The tax rate should, therefore, be as closely linked to the level of environmental externality as possible for it to translate into specific environmental and social outcomes. The environmental objective is the primary objective, and it should be decided upon before an appropriate tax rate can be set.⁹⁰ The manner in which the tax rate translates into the specific environmental outcomes must be understood. A gradual phasing in of the tax and significant pre-announcement periods signalling increasing tax rates gives taxpayers sufficient time to adjust.

Tax evasion and avoidance is costly and unproductive, it undermines the environmental effectiveness and revenue potential of the carbon tax.⁹¹ Tax avoidance and evasion tends to be higher in developing

⁸⁴ The Carbon Tax Act 15 of 2019; The Customs and Excise 91 of 1964.

⁸⁵ National Treasury 'A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform in South Africa' Draft Policy Paper, 2006 at vii.

⁸⁶ Delport E 'Creating an Effective and Equitable Legal Carbon Taxing Regime for South Africa' Principles of Environmental Law Thesis, University of Cape Town, 2017 at 39; Hughes R 'Critical Review of South Africa's Future Carbon Tax Regime' Masters Dissertation, University of Cape Town, 2017 at 22; National Treasury 'A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform in South Africa' Draft Policy Paper, 2006 at 61.

⁸⁷ National Treasury 'A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform in South Africa' Draft Policy Paper, 2006 at 61; Delport E 'Creating an Effective and Equitable Legal Carbon Taxing Regime for South Africa' Principles of Environmental Law Thesis, University of Cape Town, 2017 at 39.

⁸⁸ National Treasury 'A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform in South Africa' Draft Policy Paper, 2006 61.

⁸⁹ Delport E 'Creating an Effective and Equitable Legal Carbon Taxing Regime for South Africa' Principles of Environmental Law Thesis, University of Cape Town, 2017 at 39.

⁹⁰ Delport E 'Creating an Effective and Equitable Legal Carbon Taxing Regime for South Africa' Principles of Environmental Law Thesis, University of Cape Town, 2017 at 39.

⁹¹ Hughes R 'Critical Review of South Africa's Future Carbon Tax Regime' Masters Dissertation, University of Cape Town, 2017 at 22; National Treasury 'A Framework for Considering Market-Based Instruments to Support

countries, therefore it should be a greater concern to policymakers in those countries.⁹² This can be prevented with general observation and compliance with the tax policy. National Treasury highlights the importance of adequate monitoring and enforcement in securing the effectiveness of any tax instrument.⁹³ Taxing the commodity at the source of the emissions minimises the administrative task to ensure overall compliance.

Introducing a new tax is expensive, it requires administrative costs, set-up costs and cost of collection. To ease this burden, the tax policy should be relatively easy to monitor and enforce. The level of compliance that can be achieved with tax policy appears to depend on the extent to which authorities are able to effectively enforce it.⁹⁴ The costs associated with the administration and collection should be kept to an absolute minimum for a net benefit to be achieved from levying the carbon tax. Time and labour costs can be minimised by reducing the number of statutory taxpayers, and this can be done by applying upstream taxation, and taxing the commodity at the source.⁹⁵ Taxing at the source guarantees administrative efficiency and saves administrative costs and time as the number of taxpayers is minimised, which also prevents tax evasion and avoidance.

2.11 Competitiveness Effects

The carbon tax is fundamentally designed to influence economic behaviour. Inevitably this will have a substantial effect on the industries and those persons who are subject to it. The economic impact of environmentally related taxes is a critical factor to be considered when assessing its effectiveness. Any measure that seeks to change behaviour by way of direct regulation or by creating incentives through taxation will have far-reaching and complex ripple effects on the stability of the economy. The nature and extent of the effect on competition must be understood within the context of the domestic and international market.

Environmental Fiscal Reform in South Africa' Draft Policy Paper, 2006 at 61; Delport E 'Creating an Effective and Equitable Legal Carbon Taxing Regime for South Africa' Principles of Environmental Law Thesis, University of Cape Town, 2017 at 39.

⁹² Liu AA 'Tax Evasion and the Double Dividend' (2010) Available at: < <https://ssrn.com/abstract=1702000> or <http://dx.doi.org/10.2139/ssrn.1702000>> (Accessed 20 June 2020).

⁹³ National Treasury 'A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform in South Africa' Draft Policy Paper, 2006 at 61.

⁹⁴ Delport E 'Creating an Effective and Equitable Legal Carbon Taxing Regime for South Africa' Principles of Environmental Law Thesis, University of Cape Town, 2017 at 42.

⁹⁵ Delport E 'Creating an Effective and Equitable Legal Carbon Taxing Regime for South Africa' Principles of Environmental Law Thesis, University of Cape Town, 2017 at 42; Dorband II, Jakob M, Kalkuhl M, & Steckel JC 'Poverty and distributional effects of carbon pricing in low-and middle-income countries—A global comparative analysis' (2019) 115 *World Development* at 247.

The impact on competitiveness depends on the tax base and tax rate. Carbon tax policy designates who is liable for the tax, namely those polluters closest to the source of emissions. However, it does not necessarily mean that those taxpayers will bear the effective burden of the tax. Those who bear the burden of the tax should be identified to implement practical measures that minimise adverse effects.⁹⁶ It is necessary to consider the possibility of substitution, where taxpayers can reduce their carbon tax liability by choosing alternative means to perform their commercial and private activities. Where there is a limited scope for firms to transition to cleaner and greener technologies, their ability to substitute away from the tax is significantly constrained.⁹⁷ The design of a carbon tax should include provisions that recognise these challenges and mitigate the negative economic impacts on the competitiveness of local industries that are caused by behavioural change.⁹⁸

In the context of the domestic market, industries have the ability to shift the tax burden onto consumers by raising prices.⁹⁹ The price elasticity of demand for the affected goods or services and the degree of competition posed from imports determines producers' ability to shift the tax. Where the taxable commodity is price elastic, a price increase will cause a reduction in the demand for the commodity in the short term. Where the commodity is price inelastic, a steady and gradual increase in the price of the tax rate has the potential to generate revenue whilst avoiding a sudden disturbance in the market. Energy consumption and utilisation are price inelastic due to the country's heavy dependence on non-renewable energy and carbon-intensive goods. Also, a large portion of South Africa's population live in poverty and do not have access to adequate energy.¹⁰⁰ Government's commitment to increase access to basic energy for low-income households further indicates that taxes on energy consumption is a reliable long-term solution to create incentives that change consumer behaviour.

Where key factors of production are traded in international markets are subject to an environmentally related tax competitiveness issues may also arise.¹⁰¹ Industries and firms that are exposed to international competition have less ability to shift the tax burden to consumers as local firms have

⁹⁶ National Treasury 'A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform in South Africa' Draft Policy Paper, 2006 at 62.

⁹⁷ Delport E 'Creating an Effective and Equitable Legal Carbon Taxing Regime for South Africa' Principles of Environmental Law Thesis, University of Cape Town, 2017 at 43.

⁹⁸ Delport E 'Creating an Effective and Equitable Legal Carbon Taxing Regime for South Africa' Principles of Environmental Law Thesis, University of Cape Town, 2017 at 43.

⁹⁹ National Treasury 'A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform in South Africa' Draft Policy Paper, 2006 at 63.

¹⁰⁰ Krneta T 'The Influence of Carbon Tax Implementation on Green Growth in South Africa' Masters Dissertation, Universidad Pontificia Comillas, 2016 at 17.

¹⁰¹ National Treasury 'A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform in South Africa' Draft Policy Paper, 2006 at 62.

little influence over international price levels.¹⁰² Where the carbon tax presents negative impacts on the competitiveness of local industries, mitigation measures will be necessary to reduce the burden. According to National Treasury, measures that are accepted to reduce the burden of environmentally related taxes can include: “reduced tax rates, tax ceilings, or in extreme cases, complete exemptions, tax refunds, recycling revenues, gradual implementation and phase-in of a tax instrument; border tax adjustments and tax harmonisation.”¹⁰³ The use of revenues has been noted and emphasised as an important factor in the effectiveness of an environmentally related tax. This is due to its potential to ease the effect of the burden which it imposes on the economy.¹⁰⁴

2.12 Distributional Impacts

The distributional impacts of environmentally related taxes refer to the impact that the tax will have on different income groups. Tax instruments should embrace horizontal and vertical equity considerations.¹⁰⁵ Vertical equity requires that those who are in differing economic situations bear different tax burdens, and horizontal equity requires that all those within a similar economic situation be treated the same.¹⁰⁶ Carbon taxes result in a general price increase of a product or service that is subject to the tax. This primarily affects consumers in two ways, first a direct price increase on energy products such as fuel that results in a direct negative impact on households dependent on fossil fuels for transport, cooking and heating. Indirectly, the cost of manufacture of goods and the delivery of energy-intensive services is passed on to the consumer.¹⁰⁷ The distributional effect that the carbon tax will have on low-income households depends on domestic energy expenditure, use and transport patterns.¹⁰⁸ Household energy consumption and expenditure patterns have been shown to change systematically according to the level of income.¹⁰⁹ High income houses consume the most energy although only a small fraction of their income is spent on it. Low-income households, consume a

¹⁰² National Treasury ‘A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform in South Africa’ Draft Policy Paper, 2006 at 63.

¹⁰³ National Treasury ‘A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform in South Africa’ Draft Policy Paper, 2006 at 63.

¹⁰⁴ Ndebele Z ‘Taxing Economic “Bads”: The Case for a Carbon Tax in South Africa’ Masters Dissertation, University of KwaZulu-Natal, 2016 at 23-24.

¹⁰⁵ National Treasury ‘A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform in South Africa’ Draft Policy Paper, 2006 at 63.

¹⁰⁶ Hughes R ‘Critical Review of South Africa’s Future Carbon Tax Regime’ Masters Dissertation, University of Cape Town, 2017 at 25.

¹⁰⁷ Hughes R ‘Critical Review of South Africa’s Future Carbon Tax Regime’ Masters Dissertation, University of Cape Town, 2017 at 25.

¹⁰⁸ Delpont E ‘Creating an Effective and Equitable Legal Carbon Taxing Regime for South Africa’ Principles of Environmental Law Thesis, University of Cape Town, 2017 at 48; Dorband II, Jakob M, Kalkuhl M, & Steckel JC ‘Poverty and distributional effects of carbon pricing in low-and middle-income countries—A global comparative analysis’ (2019) 115 *World Development* at 247.

¹⁰⁹ Dorband II, Jakob M, Kalkuhl M, & Steckel JC ‘Poverty and distributional effects of carbon pricing in low-and middle-income countries—A global comparative analysis’ (2019) 115 *World Development* at 247.

significantly smaller amount of energy in comparison to high-income households, but spend a larger portion of their income on energy and transport. Dorband and others specify stating that “low-income households are more price-responsive to increases in certain spending categories, namely: 'Food, beverages and tobacco', 'Medical and health', 'Transport and communication', 'Recreation' as well as 'Other'”.¹¹⁰ Low-income households can, therefore, be expected to reduce their consumption more than high income households due to a carbon tax-induced price increase.¹¹¹ This is because higher income households are better able to absorb price increases into their budgets with a negligible effect on energy consumption. The increase in fuel and electricity prices from carbon tax may, however, increase the regressive effect of the tax and potentially lead to other negative unintended consequences that are also harmful to the environment.¹¹² For example, a high carbon tax rate on fossil fuels that does not include the combustion of certain types of biomass and biofuel creates a price difference between those fuel sources that are covered and those that are not. This may, although unintentional, incentivise poorer households to turn to natural biomass resources, such as the combustion of wood, for energy and other basic needs of survival because it is cheaper and readily available.¹¹³ Unintended outcomes such as the one outlined, come with their own set of negative consequences such as increased air pollution, increased deforestation and negative public health outcomes to name a few. Deforestation and loss of tree coverage is also a major contributor to generalised warming and the accumulation of greenhouse gases in the atmosphere. It is a particular problem in Sub-Saharan Africa, where many poor inhabitants rely on firewood and charcoal to meet household energy requirements. A carbon tax in this context may only serve to strengthen dependence on biomass and sources that are not subject to the carbon tax in order to save costs. Reducing carbon tax liability in this way may result in an increase in greenhouse gas emissions that are unaccounted for.

The extent to which an environmentally related tax is regressive depends on the tax base and its policy design. Where the tax instrument disproportionately affects an income group it will be necessary to

¹¹⁰ Dorband II, Jakob M, Kalkuhl M, & Steckel JC ‘Poverty and distributional effects of carbon pricing in low-and middle-income countries–A global comparative analysis’ (2019) 115 *World Development* at 252.

¹¹¹ Dorband II, Jakob M, Kalkuhl M, & Steckel JC ‘Poverty and distributional effects of carbon pricing in low-and middle-income countries–A global comparative analysis’ (2019) 115 *World Development* at 247; Kalkuhl M, Edenhofer O, & Lessmann K ‘Renewable energy subsidies: Second-best policy or fatal aberration for mitigation?’ (2013) 217 34 *Resource and Energy Economics*, 35(3) available at: <<https://doi.org/10.1016/j.reseneeco.2013.01.002>>

¹¹² Delport E ‘Creating an Effective and Equitable Legal Carbon Taxing Regime for South Africa’ *Principles of Environmental Law Thesis*, University of Cape Town, 2017 at 48; Dorband II, Jakob M, Kalkuhl M, & Steckel JC ‘Poverty and distributional effects of carbon pricing in low-and middle-income countries–A global comparative analysis’ (2019) 115 *World Development* at 115, 247.

¹¹³ Dorband II, Jakob M, Kalkuhl M, & Steckel JC ‘Poverty and distributional effects of carbon pricing in low-and middle-income countries–A global comparative analysis’ (2019) 115 *World Development* at 254; Toman M & Bluffstone R ‘Challenges in assessing the costs of household cooking energy in lower-income countries’ (2017) *Policy Research Working Papers* available at: <<https://doi.org/10.1596/1813-9450-8008>> (accessed 21 June 2020).

consider mitigation and/or compensation.¹¹⁴ A mitigation measure seeks to reduce the burden of the tax on specific income groups, and these can be built into the design of the tax.¹¹⁵ Where mitigation measures cannot effectively be built into the design of the tax, compensation should be provided for special groups most vulnerable to the adverse effects of the carbon tax.¹¹⁶

2.13 Adjoining Policy Areas

This criterion pertains to the ability of the carbon tax to exist in harmony with other policies and objectives. An environmentally related tax should be aligned and complementary to other measures such as regulation and voluntary agreements.¹¹⁷ Where there is a range of measures introduced to achieve an environmental objective those policies should be mutually supportive. Contradictions within the carbon tax legislative framework undermine the effectiveness of the policy because they create uncertainty, therefore potential conflicts and trade-offs should be identified and addressed as early as possible. Environmentally related taxes should lead to the attainment of other social and economic objectives such as poverty reduction, job creation, access to basic services and adequate water and sanitation.

2.14 Gaps in the literature

A large portion of the currently available literature dealing with carbon taxes and other market-based instruments addressing climate action and carbon pricing focuses predominantly on the broad environmental objective and the potential economic gain that could be achieved. There is a general understanding that carbon taxes work to change human behaviour gradually to preserve the existence of humanity and the delicate balance of nature. The burden it places upon society, although significant, in the light of this is well justified and reasonable. When the carbon tax is constructed properly it could reduce existing externalities and distortions present in the market and improve economic efficiency so that the safety and sustainability of the economy and the wider public is not jeopardised. Academics agree that the revenue aspect of the carbon tax makes it more desirable, and

¹¹⁴ National Treasury 'A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform in South Africa' Draft Policy Paper, 2006 at 64.

¹¹⁵ National Treasury 'A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform in South Africa' Draft Policy Paper, 2006 at 64.

¹¹⁶ National Treasury 'A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform in South Africa' Draft Policy Paper, 2006 at 64.

¹¹⁷ National Treasury 'A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform in South Africa' Draft Policy Paper, 2006 at 64.

it is also fairly simplistic and cost-effective to implement as it primarily relies on revenue authorities which are administrative structures that are already in place.¹¹⁸

The current literature explores carbon tax in a generalised manner and does not sufficiently detail how carbon taxes operate in conjunction with other environmentally related taxes. Environmental reform through carbon tax has far-reaching financial implications, however, there is little specificity on how the reform is to take effect especially in developing countries. The other notable deficiency in the literature is the transparency regarding the utilisation of government revenues. It is highly emphasised that the revenue potential of the carbon tax is its most attractive attribute as well as the most crucial component to its effectiveness. The lack of literature regarding how the revenues raised are to be applied leaves room for scepticism and resistance to the carbon tax. Academics have emphasised that full earmarking for a specific programme or activity is undesirable, as it is too restrictive, whereas partial or 'soft' earmarking permits some form of certainty regarding utilisation of revenues for an intended purpose whilst maintaining a level of discretion for authorities with the ability to apply funds where it is deemed most necessary. Partial or 'soft' earmarking and revenue recycling measures maintain a strong connection to the environmental objective of the tax. That said, revenues that are collected from carbon tax should not be applied to governments' general spending budget, it allows too much room for misappropriation.¹¹⁹ A fair balance would be to restrict the scope of utilisation of the revenues raised by carbon tax for entities and circumstances that deal with environmentally related concerns. Flexibility is then maintained by providing authorities and regulatory bodies with the discretion to make allocations based on need and environmentally related significance.

¹¹⁸ Davis Tax Committee: Carbon Tax Report 2015 at 33.

¹¹⁹ Hughes R 'Critical Review of South Africa's Future Carbon Tax Regime' Masters Dissertation, University of Cape Town, 2017 at 54; Krneta T 'The influence of carbon tax implementation on green growth in South Africa' 2016 at 79 80; Ndebele Z 'Taxing Economic "Bads": The Case for a Carbon Tax in South Africa' Masters Dissertation, University of KwaZulu-Natal, 2016 at 24.

2.15 Conclusion

Policies that mitigate the onset of a climate crisis favour MBIs as the most effective measure to change behavioural patterns and initiate environmental reform. The market is left to allocate limited resources that reduce waste and encourage behavioural change through market signals. Direct regulatory measures such as CAC are said to be effective in limited circumstances and are not suitable to influence private and public decision-making. Direct regulation allows for legislative norms and standards to be prescribed and applied to activities that are harmful to the environment and punitive measures to sanction non-compliance; it is most appropriate in dealing with more serious matters and addressing behaviour that pose a greater threat of imminent harm. Direct regulation is the most inflexible and invasive approach as it does not cater to the diverse and varying nature of the individual circumstances that apply to private and public entities that emit greenhouse gases, namely the taxpayers. An environmental policy that is applied in general terms and that is found to be too rigid is not the most effective in encouraging compliance and public support. Generally, an environmental policy's primary objective is to achieve an environmental benefit, this requires a degree of flexibility and regard for the case-by-case basis differences that may arise. MBIs that are recognised and applied internationally are either ETS or environmentally related taxes. ETS are slightly more rigid in their application as they aim to set a limit on the total emissions allowable by a given economy. Environmentally related taxes are preferred in South Africa over ETS for the potential of achieving the double dividend. A carbon tax provides an opportunity to achieve an environmental benefit and an economic benefit. It must be cautioned that the double-dividend hypothesis should not be accepted as a general matter of fact; because it is not a 'one size fits all' solution that can be applied uniformly across the board. Every country is made up of its own attributes and faces challenges that are unique to its circumstances. No two economies are identical. The carbon tax should, therefore, be constructed with careful consideration to the context and needs of the particular economy. The ability for the carbon tax to achieve an environmental benefit and a financial benefit depends on how the policy is designed and how it interacts with key factors outlined by National Treasury within the economy.

Chapter 3: Review of the carbon tax in South Africa

3.1 Introduction

This discussion begins with a brief look at the structure and context within the South African economy and analyses the Carbon Tax Act 15 of 2019 against the key elements discussed in the previous chapter, to determine whether it is the appropriate mechanism for South Africa and the likely implications it may have for economic growth and unemployment. The carbon tax is shrouded in cautious optimism due to the fear that it may worsen the already slow growth of the South African economy, cause unintended consequences and negative feedback loops.¹²⁰ The structure and specific circumstances of South Africa's carbon-intensive economy are important considerations to achieve the 'best possible policy design' for the carbon tax.¹²¹ Reservations against the carbon tax are generally focussed on the regressive effects, competitiveness concerns and distributional aspects associated with it, and that the increase in production costs imposed by the carbon tax is harmful to local and international competition, a negative effect that leads to widespread job losses in carbon-intensive sectors, that will disproportionately affect the budgets of the poorest South African households.¹²² It was also contended by various interest groups that a meaningful reduction in domestic greenhouse gas emissions is unlikely to be achieved, given the low effective tax rate and the government's laissez-faire attitude towards environmental reform.¹²³ The interaction between the Carbon Tax Act and the South African economy comes under scrutiny in this chapter. It explores whether the Act is capable of achieving a double dividend and the effect that it may have on the economy, social welfare, and inclusive sustainable development.

¹²⁰ Alton T *et al* 'The Economic Implications of Introducing Carbon Taxes in South Africa' United Nations University, Working Paper 2012/46, 2012 at 1.

¹²¹ World Bank Group 'A Carbon Tax Guide: A Handbook for Policy Makers' (2017) at 33.

¹²² Fakoya MB 'Carbon tax policy implications for economic growth and unemployment rates in South Africa: a conceptual thought' (2014) 5 *Environmental Economics* 3 at 93.

¹²³ Davis Tax Committee: Carbon Tax Report: November 2015, 25.

3.2 The South African socio-economic context

South Africa is amongst the most carbon-intensive economies in the world ranking fourteenth within the top twenty major emitters of greenhouse gasses, and it is also the heaviest polluter in Africa.¹²⁴ South Africa is a middle-income economy shaped by its complex social, environmental and economic challenges. The increasing prevalence of poverty and unemployment hinders economic progress; a large portion of society remains living without adequate access to basic essential needs and services, whilst the minority are economically active and financially secure.¹²⁵ Resources and opportunities are inequitably distributed, a large portion of the youth remains unemployed, and despite some progress to reduce poverty and unemployment during two and a half decades of democracy, the nation is still deeply divided and very unequal. Economic growth and the creation of jobs and opportunities remains a top priority to improve the social wellbeing of its people and reduce inequality within its borders.¹²⁶ Mounting pressure from local and international institutions to take decisive action and initiate a transition from a carbon-intensive economy to a ‘greener’ low carbon economy has led most of the debate on whether sustainable and environmentally conscious development is feasible at this stage.¹²⁷ Many believe that South Africa’s social and economic challenges make the nation incapable of accommodating an environmental tax without causing irreparable harm that is unjustifiable.

3.2.1 Fossil fuels and the energy sector

Carbon-intensive sectors such as electricity, mining, manufacturing and transport are the major economic drivers of the economy and are also the most pollutant. The natural abundance of non-renewable fossil fuel resources encapsulated within its territory formed the basis of South Africa’s economic development. For this reason, coal has become a cheap and easily accessible commodity and is favoured as the nation’s primary energy source. The National Energy Regulator of South Africa (NERSA) and the Department of Energy through its Integrated Resource Plan regulates South Africa’s energy mix and the price of energy.¹²⁸ Together it establishes an infrastructure development

¹²⁴ Maphosa J ‘A Comparative Study of Effectiveness of Green Taxes in South Africa and Developed Countries’ Masters Dissertation, University of Pretoria, 2014 at 19 Policy Insights ‘South Africa’s Carbon Tax: Balancing Climate Action and Economic Development’ 2020 available at: <<https://saiia.org.za/research/south-africas-carbon-tax-balancing-climate-action-and-economic-development/>> (accessed 15 August 2020) at 81; Alton T *et al* ‘The Economic Implications of Introducing Carbon Taxes in South Africa’ United Nations University, Working Paper 2012/46, 2012 at 1.

¹²⁵ StatsSA ‘Living Conditions Survey’ available online at: <<http://www.statssa.gov.za/?p=12075>> (accessed June 2019).

¹²⁶ National Planning Commission ‘National development plan vision 2030’ 2013.

¹²⁷ The Paris Agreement 2015.

¹²⁸ Department of Mineral Resources Integrated Resource Plan 2019 at 9-13; Ndebele Z ‘Taxing Economic “Bads”: The Case for a Carbon Tax in South Africa’ Masters Dissertation, University of KwaZulu-Natal, 2016 at 36-7; Hughes R

plan for supplying electricity at the least cost, taking into account the security of the electrical supply and the environment.¹²⁹ South Africa's energy sector follows a monopolistic structure. Eskom Ltd, a state-owned enterprise, is the primary provider of approximately 95 per cent of the country's electricity, it also contributed 55 per cent of the country's greenhouse gas emissions in 2010.¹³⁰ This sector's emissions have since increased following the creation of the Medupi and Kusile coal-fired power stations.¹³¹ The IRP of 2019 pledges to pursue a more diversified energy mix that will increase reliance on renewable energy in time. The number of contracts that were concluded to bring additional capacity from coal were budgeted at an all-time low for 2021 and 2022, whilst the budget for renewable solar and wind contracts were planned to steadily increase in future.¹³² Although the IRP for 2030 shows a decline in the amount of fossil fuel acquisition contracts it intends to conclude, it is still the predominantly favoured option.

Despite the stronghold that the South African economy has on carbon-intensive means of production, there is growing acceptance for environmental reform and willingness to embrace low carbon and renewable technologies. The consequences of global warming and climate change are projected to be particularly negative for developing countries, where the capacity to adapt to the uncertain and ever-changing conditions brought about by climate change is constrained. South Africa's long-term interests are in favour of climate change mitigation over adaptation.¹³³ Adaptation as a primary strategy concerning climate concerns comes at a high cost and creates a risk for those sectors that are highly dependent on the stability of the environment. Another robust reason that is in support of South African climate action is that it would be implementing climate policy in support of global policy and importantly it would secure South Africa's position as a pioneer on environmental fiscal policy in Africa.¹³⁴

'Critical Review of South Africa's Future Carbon Tax Regime' Masters Dissertation, University of Cape Town, 2017 at 35-6 66 74-5.

¹²⁹ Department of Mineral Resources Integrated Resource Plan 2019 at 8.

¹³⁰ Kalaba M 'South Africa's Carbon Tax: Balancing Climate Action and Economic Development' Policy Insights 81, 2020 available at: <<https://saiia.org.za/research/south-africas-carbon-tax-balancing-climate-action-and-economic-development/>> (accessed 15 August 2020) at 12; Fakoya MB 'Carbon tax policy implications for economic growth and unemployment rates in South Africa: a conceptual thought' (2014) 5 *Environmental Economics* 3 at 93; Delpont E 'Creating an Effective and Equitable Legal Carbon Taxing Regime for South Africa' Principles of Environmental Law Thesis, University of Cape Town, 2017 at 11.

¹³¹ Delpont E 'Creating an Effective and Equitable Legal Carbon Taxing Regime for South Africa' Principles of Environmental Law Thesis, University of Cape Town, 2017 at 11.

¹³² Department of Mineral Resources Integrated Resource Plan 2019 at 10.

¹³³ Alton T *et al* 'The Economic Implications of Introducing Carbon Taxes in South Africa' United Nations University, Working Paper 2012/46, 2012 at 1.

¹³⁴ Alton T *et al* 'The Economic Implications of Introducing Carbon Taxes in South Africa' United Nations University, Working Paper 2012/46, 2012 at 1.

The National Development Plan notes that South Africa is particularly vulnerable to the adverse effects of climate change on public health, livelihoods, water and food.¹³⁵ The effects of this will have a disproportionate impact on the poor and place further strain on the overall social welfare of the nation. The majority of South Africa's environmental tax legislation currently in place was created with the primary intent to raise revenue.¹³⁶ As a result, the general policy structure and design are not necessarily following what is most suitable to achieve an environmental benefit. An environmental policy designed in favour of raising revenues over securing an environmental objective creates untapped potential to improve environmental outcomes and behavioural incentives.¹³⁷

3.3 The Carbon Tax Act

The Carbon Tax Act is a vital part of ensuring that South Africa meets its targets under the Paris Agreement. South Africa's energy mix makes carbon taxes preferable over the popular carbon emissions trading systems (ETS) implemented in developing countries.¹³⁸ This is because most of the energy supplied in South Africa comes from one source: Eskom. ETS are more suitable in an economy where there are many stakeholders to trade carbon credits, and South Africa has too few companies to accommodate this system. Policy makers believe that carbon tax will correct the existing prices of carbon intensive goods and services that generate excessive levels of anthropogenic greenhouse gas emissions to reflect the true social cost of such emissions.¹³⁹ The primary objective is to change future behaviour by creating incentives, it is not to be construed as a mere revenue-raising exercise. A carbon tax provides that producers of greenhouse gas emitting goods or services pay a tax that corresponds to the amount of carbon dioxide emitted in the production of the product or the carbon dioxide equivalent where it emits any other greenhouse gas.¹⁴⁰

The Carbon Tax Act creates a clear price signal to polluters to reduce their greenhouse gas emissions and initiates the transition to a low carbon economy. It applies the 'polluter-pays principle', and tax

¹³⁵ National Planning Commission 'National development plan vision 2030' 2013 at 33.

¹³⁶ 'Petrol, Diesel and biodiesel' are classified as fuel levy goods in terms of the Customs and Excise Act 91 of 1964, "The Memorandum of Agreement regarding the excise tax on plastic shopping bags states that the primary objective is not so much to act as a disincentive measure but more to contribute towards funds to promote the recycling of plastic bags in particular and promote general environmental awareness."- National Treasury 'A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform in South Africa' Draft Policy Paper, 2006 at 48.

¹³⁷ National Treasury 'A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform in South Africa' Draft Policy Paper, 2006 at iii.

¹³⁸ National Treasury Explanatory Memorandum on the Carbon Tax Bill 2018 at 4.

¹³⁹ National Treasury Explanatory Memorandum on the Carbon Tax Bill 2018 at 4; Fakoya MB 'Carbon tax policy implications for economic growth and unemployment rates in South Africa: a conceptual thought' (2014) 5 *Environmental Economics* 3 at 94.

¹⁴⁰ Delport E 'Creating an Effective and Equitable Legal Carbon Taxing Regime for South Africa' Principles of Environmental Law Thesis, University of Cape Town, 2017 at ii.

is levied at the source closest to the emissions holding polluters responsible for the damage done to the environment.¹⁴¹ “Carbon tax” is defined in S1 as ‘a tax on the carbon dioxide (CO₂) equivalent of greenhouse gas emissions imposed in terms of Section 2. The underlying rationale for the tax is that if the negative environmental externalities and social costs of carbon emissions and pollution are internalised, carbon intensive products will become increasingly expensive, ultimately causing a behavioural change that reduces the demand for carbon-intensive products in the long term. Consumers are encouraged to make more environmentally sustainable decisions.¹⁴² The average production and utility costs of carbon intensive companies would become too impractical, and this would prompt innovative and sustainable projects.¹⁴³

The Act comes into force gradually and is divided into three phases. The first phase began in June 2019. The phasing-in of the tax provides polluters with adequate time to prepare for the tax.¹⁴⁴ Each phase makes necessary provision for its allowances, exemptions and rebates. Polluters or ‘taxpayers’ are obligated to monitor and report their emissions to environmental and revenue authorities and calculate and pay their taxes biannually.¹⁴⁵ The rate of tax is set at R120 per tonne of carbon dioxide equivalent emissions.¹⁴⁶ A basic tax-free threshold of 60 per cent is available to all taxpayers during the first phase and is accompanied by various allowances such as the “fossil fuel combustion emissions allowance, the industrial process emissions allowance, allowances in respect of fugitive emissions, a trade exposure allowance, a performance allowance, a carbon budget allowance and a carbon offset allowance.”¹⁴⁷ Offset allowances are regulated in terms of S13 of the Act, it permits the taxpayer to “reduce the amount in respect of carbon tax for which the taxpayer is liable in a given tax period by utilising carbon offsets.”¹⁴⁸ The reduction of liability for the taxpayer “cannot exceed the percentage of the total greenhouse gas emissions of the taxpayer in a given tax period, it is determined by matching the line in the column “Activity/Sector” with the percentage in the line of the column “Offsets Allowance %” in Schedule 2 of the Act.”¹⁴⁹ S19(3) of the Act provides that “the Minister must make regulations in respect of carbon offsets regarding the projects or activities in respect of

¹⁴¹ National Treasury Media Statement Publication of the 2019 Carbon Tax Act at 1; Delpont E ‘Creating an Effective and Equitable Legal Carbon Taxing Regime for South Africa’ Principles of Environmental Law Thesis, University of Cape Town, 2017 at 10.

¹⁴² Delpont E ‘Creating an Effective and Equitable Legal Carbon Taxing Regime for South Africa’ Principles of Environmental Law Thesis, University of Cape Town, 2017 at 9.

¹⁴³ Fakoya MB ‘Carbon tax policy implications for economic growth and unemployment rates in South Africa: a conceptual thought’ (2014) 5 *Environmental Economics* 3 at 93.

¹⁴⁴ National Treasury Carbon Tax Bill 2018: Response Document at 6; Davis Tax Committee Report on A Carbon Tax for South Africa 2017 at 13-14.

¹⁴⁵ S18 Carbon Tax Act 15 of 2019.

¹⁴⁶ S5(1) Carbon Tax Act 15 of 2019.

¹⁴⁷ S7, 8, 9, 10, 11, 12 Carbon Tax Act 15 of 2019.

¹⁴⁸ ‘Offset’ means an avoidance, a reduction or a sequestration of Carbon Dioxide equivalent (CO_{2e}) recognized in terms of an approved project- Regulations on carbon offsets under S19 of the Carbon Tax Act 15 of 2019.

¹⁴⁹ S13(2) of the Carbon Tax Act 15 of 2019.

which an offset is generated, the limitation of the offset allowance, offset duration periods, the institution that must administer the offset and the powers and responsibilities of the institution, the procedure that must be followed to claim the offset allowance, the records that must be kept and any other matters necessary for the regulation of carbon offsets.” Part II of the Regulations on carbon offsets under S19 of the Carbon Tax Act 15 of 2019 at reg 2(1) provides for eligibility. It provides, “an offset for purposes of S13 of the Carbon Tax Act must be allowed to a taxpayer derived from the furtherance of an approved project wholly undertaken within the Republic and that is not subject to carbon tax subject to sub regulations 2(2) and 2(3).” Therefore, any activity is eligible for a carbon offset allowance if the activity as a whole is conducted within the Republic of South Africa and is not subject to the carbon tax. Carbon offsets are created from the date that the approved project reduced greenhouse gas emissions for the duration of periods that are prescribed by the Minister for CDM projects, Gold Standard projects, VCS projects and all other offsets respectively.¹⁵⁰

The total allowances that are available in the Act are limited in terms of Section S14 to a maximum reduction of liability to 95 per cent.¹⁵¹ The tax is administered as an environmental levy in terms of S54A of the Customs and Excise Act by the Commissioner of SARS.¹⁵²

The Act came into effect during a period of stagnant economic growth and development. It was feared that carbon tax might pose a financial threat to primary sectors’ industries that contribute the most to the country’s GDP, employment and economic stability. Scepticism of the tax comes from the idea that carbon tax will exacerbate the slow growth of the South African economy. Transitioning to a low carbon economy has the potential to create jobs and opportunities of a different kind. A ‘green economy’ comprises of industries and sectors that provide opportunities that are environmentally and economically sustainable. The green economy values labour and human resources as its main commodity. The carbon tax encourages improved energy efficiency measures, and it generates employment opportunities in renewable and other low carbon industries. Low carbon industries are generally labour-intensive as they require a larger workforce thus creating more jobs. This is a potentially suitable solution for a country like South Africa with its high unemployment rate. The prevalence of differing academic, economic, legal and environmental opinions provides a multitude of perspectives on how a carbon tax could affect the economy. From such, it can be argued that the

¹⁵⁰ Regulations on carbon offsets under S19 of the Carbon Tax Act 15 of 2019.

¹⁵¹ S14 of the Carbon Tax Act 15 of 2019.

¹⁵² S15 of the Carbon Tax Act 15 of 2019.

effect of a carbon tax policy is mostly determined by its policy design and how the proceeds from it are used to soften the blow that may be caused by its effects.¹⁵³

3.4 A Critical Review of the Carbon Tax Act

It is important to note a few critical insights before embarking on a review of the Act in detail. Most of the tax generated by the Carbon Tax Act will come from the electricity sector causing an increase in electricity prices. Carbon tax also increases living expenses for private households and operating expenses for industry.¹⁵⁴ The development of South Africa's renewable electricity sector has been slow, a significant element that limits taxpayers' ability to mitigate away from the carbon tax and substitute to other energy alternatives. As a result, most of South Africa's consumers will be subjected to increased electricity prices.¹⁵⁵ The increase may lead to 'piggybacking' where the costs of those who cannot pay for the carbon tax are carried by those who are able to do so.¹⁵⁶ Leading on to the next point, most of the carbon tax is being collected from one source, Eskom. The main objective of environmental tax should be to secure an environmental benefit; therefore, promotion of the renewable energy sector would help to facilitate achieving the objective. Other benefits such as revenue that may stem from such a policy are to be viewed as ancillary to the operation of the tax. They should not carry too much weight in the design and pursuit of the tax.¹⁵⁷ The evaluation of the viability of the carbon tax considers its interaction with the economy, distribution of income and its effect on poor households and greenhouse gas emissions, as well as its ability to achieve an environmental benefit and to generate revenue. The tax burden should not fall disproportionately on certain income groups, so therefore it is important to consider how the revenues are applied. Effective viable carbon tax contributes to innovation, technological advancement and investment into technology that is less emission intensive.

¹⁵³ Fakoya MB 'Carbon tax policy implications for economic growth and unemployment rates in South Africa: a conceptual thought' (2014) 5 *Environmental Economics* 3 at 93.

¹⁵⁴ Delport E 'Creating an Effective and Equitable Legal Carbon Taxing Regime for South Africa' Principles of Environmental Law Thesis, University of Cape Town, 2017 at 12.

¹⁵⁵ Delport E 'Creating an Effective and Equitable Legal Carbon Taxing Regime for South Africa' Principles of Environmental Law Thesis, University of Cape Town, 2017 at 12.

¹⁵⁶ Delport E 'Creating an Effective and Equitable Legal Carbon Taxing Regime for South Africa' Principles of Environmental Law Thesis, University of Cape Town, 2017 at 13.

¹⁵⁷ Delport E 'Creating an Effective and Equitable Legal Carbon Taxing Regime for South Africa' Principles of Environmental Law Thesis, University of Cape Town, 2017 at 13.

3.4.1 Environmental Effectiveness

The key elements that influence the environmental success of carbon tax policy are the existence of a clearly defined environmental objective that is based on a measurable unit of pollution, and the best design should be aimed for. Exemptions and allowances must be kept to an absolute minimum.¹⁵⁸ The Act imposes the tax at a rate of R120 per ton of CO₂e with an effective rate R6 and R48 per ton of CO₂.¹⁵⁹ A basic tax-free threshold of 60 per cent along with sector-specific allowances and exemptions is provided to taxpayers. The rate increases by 10 per cent per annum and the basic 60 per cent tax-free threshold will no longer be available in the second phase.¹⁶⁰

The University of Pretoria General Equilibrium Model (UPGEM) used by Ward and Battista, is a dynamic equilibrium model of the South African economy. It provides a quantitative description of the interaction and linkages between different sectors within the economy when assessing the impact of policies.¹⁶¹ This General Equilibrium Model provides a general understanding of the impact of the carbon tax on the whole economy; it suggests that carbon taxes will make a significant contribution to reducing South Africa's greenhouse gas emissions.¹⁶² The results of the model also indicate that "the carbon tax would lead to an estimated decrease in emissions of 13 per cent to 14.5 per cent by 2025 and 26-33 per cent by 2035 compared to business-as-usual."¹⁶³ This supports the objective of achieving a 42 per cent reduction of greenhouse gas emission by 2035. The reduction of greenhouse gas emissions is realised while maintaining sustained economic growth, although it is expected that the annual average growth rate of the economy will be reduced by 0.05-0.15 per cent compared to a business-as-usual trajectory resulting in a net growth of 3.3-3.5 per cent per year.¹⁶⁴ The model assumes that the carbon tax also leads to a reduction in other taxes such as labour, income and VAT.¹⁶⁵ Economic growth would be negatively impacted in the short term, an effect that could be significantly reduced by revenue-recycling initiatives and an increase of direct spending by government utilising

¹⁵⁸ National Treasury 'A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform in South Africa' Draft Policy Paper, 2006 at vii.

¹⁵⁹ National Treasury 'A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform in South Africa' Draft Policy Paper, 2006 at vii.

¹⁶⁰ S5 Carbon Tax Act 15 of 2019; Fakoya MB 'Carbon tax policy implications for economic growth and unemployment rates in South Africa: a conceptual thought' (2014) 5 *Environmental Economics* 3 at 94; National Treasury Explanatory Memorandum on the Carbon Tax Bill 2018 at 5.

¹⁶¹ Ward J and de Battista G 'Modelling the impact on South Africa's Economy of Introducing A Carbon Tax' World Bank Group 2016 at 5.

¹⁶² Ward J and de Battista G 'Modelling the impact on South Africa's Economy of Introducing A Carbon Tax' World Bank Group 2016 at vii.

¹⁶³ Ward J and de Battista G 'Modelling the impact on South Africa's Economy of Introducing A Carbon Tax' World Bank Group 2016 at vii.

¹⁶⁴ Ward J and de Battista G 'Modelling the impact on South Africa's Economy of Introducing A Carbon Tax' World Bank Group 2016 at vii.

¹⁶⁵ Davis Tax Committee 'Carbon Tax Report: November 2015' at 12.

revenues of carbon taxes. The tax is also proven to have a disproportionate effect on poor households in the form of increased energy, transportation and food costs.¹⁶⁶

The impact of the tax can be effectively determined where the policy is efficiently monitored and evaluated, as it informs policy decisions and design.¹⁶⁷ This necessitates the existence of a reliable system that facilitates the monitoring and evaluation of the tax periodically. Evaluating the effectiveness of an environmental tax is inherently complex, given the differences amongst the key role-players and the factors involved that affect CO₂ emissions.¹⁶⁸ The *GHG Inventory Report* is a basic metric that evaluates the impact of all environmental policies in existence within South Africa.¹⁶⁹ It helps to evaluate South Africa's environmentally focussed policies. It is unspecific to a carbon tax as it includes all environmental policies. It is a beneficial tool to measure the progress of the country's total effort to mitigate climate change but is not particularly useful for evaluating carbon taxes. The total exclusion of the Waste Management and Agricultural sectors in the first phase is problematic. National Treasury cites difficulties associated with creating a consistent and reliable method to measure CO₂ emissions within these sectors as the reason for its exclusion.¹⁷⁰ Despite this, it is inconsistent with the objectives of the Act to completely exclude these sectors from the tax as they are known to produce considerable amounts of CO₂ emissions.

Academics have concluded that the tax rate is not proportionally aligned with the true external costs associated with pollution and emission of greenhouse gas emissions. Given that the ultimate objective of the policy is to influence producer and consumer behaviour,¹⁷¹ the rate has been set at a level that is speculated to be too low causing a significant reduction in emissions.¹⁷² The low effective tax rate of between R6 and R48 per ton of CO₂ does not correspond with the urgency of the climate crisis.¹⁷³ The carbon offsets allowance is important to mention under effectiveness of the carbon tax in

¹⁶⁶ Ward J and de Battista G 'Modelling the impact on South Africa's Economy of Introducing A Carbon Tax' World Bank Group 2016 at 9 10.

¹⁶⁷ Ward J and de Battista G 'Modelling the impact on South Africa's Economy of Introducing A Carbon Tax' World Bank Group 2016 at 9; Hughes R 'Critical Review of South Africa's Future Carbon Tax Regime' Masters Dissertation, University of Cape Town, 2017 at 48.

¹⁶⁸ Hughes R 'Critical Review of South Africa's Future Carbon Tax Regime' Masters Dissertation, University of Cape Town, 2017 at 48.

¹⁶⁹ GHG National Inventory Report 2014 GN 371 GG 37701.

¹⁷⁰ National Treasury Carbon Tax Bill 2018: Response Document at 6; Hughes R 'Critical Review of South Africa's Future Carbon Tax Regime' Masters Dissertation, University of Cape Town, 2017 at 49; National Treasury 'A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform in South Africa' Draft Policy Paper, 2006 at 54.

¹⁷¹ Delport E 'Creating an Effective and Equitable Legal Carbon Taxing Regime for South Africa' Principles of Environmental Law Thesis, University of Cape Town, 2017 at 11 16 21 30 68; Ndebele Z 'Taxing Economic "Bads": The Case for a Carbon Tax in South Africa' Masters Dissertation, University of KwaZulu-Natal, 2016 at 32 41 58 61.

¹⁷² National Treasury Carbon Tax Bill 2018: Response Document at 6.

¹⁷³ Hughes R 'Critical Review of South Africa's Future Carbon Tax Regime' Masters Dissertation, University of Cape Town, 2017 at 49.

reducing greenhouse gas emissions; taxpayers are incentivised to engage in the furtherance of additional activities that reduce greenhouse gas emissions to reduce their carbon tax liability. It does little to provide a solution to the problem of the taxpayers' current emissions. Instead, it has the effect of actively promoting the creation of additional projects which require its own set of carbon intensive inputs. For example, an approved project for the creation of renewable forms of energy requires electricity, non-renewable resources and transport. For a taxpayer seeking the offset allowance this has the effect of decreasing personal carbon tax liability, however, increases total carbon output overall.

The low tax rate in the policy design appears to be driven by political processes and seems not to be the optimal design for GHG emission reductions.¹⁷⁴ Despite this, the Citizens Climate Lobby argues that carbon tax is still the most appropriate and efficient mechanism to push the transition to a low carbon economy, and compared to other mechanisms, carbon tax is straightforward to implement, has low transaction costs and it gives a permanent incentive to reduce emissions. It also has the dual benefit and capacity to recycle the tax revenue back into the economy.¹⁷⁵ It cannot be overemphasised that the projections relating to the carbon tax are calculated estimations at best. The outcome of the carbon tax does depend on experiencing it in operation before its effectiveness can be understood. This is because the modelling and projections generally take a macroeconomic view on the carbon tax, and they do predict with accuracy how the carbon tax will affect competition and the economy on a microeconomic level.

3.4.2 Tax Revenue

The level of tax revenues and the way in which the revenues are used are relevant to the effectiveness of carbon tax policy.¹⁷⁶ Emissions reduction and the impact of the tax on GDP depends on the policy design and availability of revenue recycling schemes and other financial measures to mitigate the effects of the tax.¹⁷⁷ National Treasury does not support full earmarking of revenues, as it is viewed as undesirable and too rigid.¹⁷⁸ Full earmarking does not sufficiently recognise the fiscal needs of

¹⁷⁴ Hughes R 'Critical Review of South Africa's Future Carbon Tax Regime' Masters Dissertation, University of Cape Town, 2017 at 50.

¹⁷⁵ Laferna A 'A Case for South Africa's Carbon Tax' 2012 available at <<http://www.pambazuka.org/en/category/features/84500>> (accessed 22 March 2020)5.

¹⁷⁶ National Treasury 'A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform in South Africa' Draft Policy Paper, 2006 at vii.

¹⁷⁷ Ward J and de Battista G 'Modelling the impact on South Africa's Economy of Introducing A Carbon Tax' World Bank Group 2016 at 22.

¹⁷⁸ Hughes R 'Critical Review of South Africa's Future Carbon Tax Regime' Masters Dissertation, University of Cape Town, 2017 at 51.

various sectors and programmes, it is rigid and causes disparities between resource needs and allocations.¹⁷⁹ A continuous review process that provides for the alteration of spending objectives gives authorities the necessary flexibility to apply resources based on where they are needed most. Partial earmarking is suitable to South Africa, and authorities have some discretion regarding the allocation of funding programmes yet restricting funding to programmes is in line with the outcomes and objectives of the tax. Revenues should be applied to programmes that are aligned with environmental protection and social equity.¹⁸⁰ Partial earmarking is also beneficial to generate public and political acceptance of the carbon tax. The Independent Power Producer Procurement Programme, Free Basic Electricity Programme and Carbon Capture and Storage are programmes that have been suggested as suitable for partial earmarking. The media statement accompanying the Carbon Tax Bill identified some specific areas as to how carbon tax revenues may be expected to be recycled. The measures outlined included “funding for the energy-efficiency tax incentive, a reduction in the electricity levy, additional tax relief for rooftop solar energy, a credit for the premium charged for renewable energy, additional basic free electricity to low-income households, and additional allocations for public transport.”¹⁸¹ The revenue recycling measures proposed by National Treasury include a combination of broad and narrow measures. Broader revenue recycling schemes have a more positive outcome on South Africa's GDP than schemes that are narrow. Narrowly applied revenue recycling schemes, where revenues are applied to a small number of sectors, encourage economic activity that distorts relative prices within those sectors.¹⁸² Broader recycling measures maintain stability and preserve relative prices throughout the economy, but the downside is that it leads to a smaller reduction in emissions. A narrower revenue recycling approach with a particular focus on the renewable energy sector increases competitiveness relative to other energy production technology, and it also accelerates the rate of structural transformation emission reductions.¹⁸³

Carbon taxes are revenue neutral within the first five years of their implementation and all revenue shall be recycled.¹⁸⁴ South Africa's measures involve tax shifting, tax incentives and “soft earmarking”. Tax shifting, reducing or not increasing other taxes is an available measure in which

¹⁷⁹ Hughes R ‘Critical Review of South Africa's Future Carbon Tax Regime’ Masters Dissertation, University of Cape Town, 2017 at 51.

¹⁸⁰ Hughes R ‘Critical Review of South Africa's Future Carbon Tax Regime’ Masters Dissertation, University of Cape Town, 2017 at 51.

¹⁸¹ Ward J and de Battista G ‘Modelling the impact on South Africa's Economy of Introducing A Carbon Tax’ World Bank Group 2016 at 2; National Treasury Media Statement Publication of the 2019 Carbon Tax Act.

¹⁸² Ward J and de Battista G ‘Modelling the impact on South Africa's Economy of Introducing A Carbon Tax’ World Bank Group 2016 at 17.

¹⁸³ Ward J and de Battista G ‘Modelling the impact on South Africa's Economy of Introducing A Carbon Tax’ World Bank Group 2016 at 17.

¹⁸⁴ Hughes R ‘Critical Review of South Africa's Future Carbon Tax Regime’ Masters Dissertation, University of Cape Town, 2017 at 52.

the revenues raised from carbon taxes may improve economic efficiency.¹⁸⁵ By using carbon tax to reduce other tax such as income or corporate tax, firms and industries pay less tax and have more spending power which may lead to positive outcomes in the economy, such as an increase in employment. In the first phase, it is a credit for the electricity generation levy.¹⁸⁶ Tax incentives are relevant to business decision-making and planning. Incentives such as tax subsidies, credits and grants were found to be more effective in encouraging energy efficiency than disincentives (taxes). Incentives are viewed as a reward, disincentives are viewed as a punishment.¹⁸⁷ Tax incentives that encourage energy efficiency were found to be better suited to developing countries, as disincentives hamper competition.¹⁸⁸ The energy efficiency savings allowance is included as a tax incentive in South Africa's carbon tax. 'Soft earmarking' refers to budget allocations that enhance free basic energy and improve public transport.¹⁸⁹ A carbon tax is conducive to economic growth if the revenues are used to improve other economic hindrances, for example, reducing other distortionary taxes such as income tax, corporate tax and VAT and reducing the national deficit.¹⁹⁰ Reducing corporate and personal taxes increases disposable income encouraging economic activity. It cannot be overemphasised that the utilisation of revenues generated from carbon taxes are inextricably linked to the overall objective of the tax and its outcome. Currently the carbon tax falls under the general government budget, an unfortunate element of the policy design. Revenues should not be applied so broadly that it becomes a part of the general fiscus; revenues should be applied in a manner that maintains an objective-driven focus to reduce emissions and discourage pollutant behaviour. A degree of flexibility should be allowed that allows authorities to apply for funding where it is needed. However, the utilisation of funds should be restricted within the confines of sustainable and low carbon economics.

3.4.3 Support for the tax

Implementing a tax reform will inevitably produce winners and losers depending on the objective of the reform and its purpose. Here it is to create a strong signal for the public to transition away from polluting behaviour and reduce greenhouse gas emissions. Tax theorists and academics tend to agree that the public's acceptance and support for an environmental tax is one of the pivotal components to

¹⁸⁵National Treasury Carbon Tax Bill 2018: Response Document at 14.

¹⁸⁶ National Treasury Carbon Tax Bill 2018: Response Document at 14.

¹⁸⁷ Dippenaar M 'The role of tax incentives in encouraging energy efficiency in the largest listed South African businesses' (2018) 21 *South African Journal of Economic and Management Sciences* 1 at 4.

¹⁸⁸ Dippenaar M 'The role of tax incentives in encouraging energy efficiency in the largest listed South African businesses' (2018) 21 *South African Journal of Economic and Management Sciences* 1 at 5.

¹⁸⁹ National Treasury Carbon Tax Bill 2018: Response Document at 14.

¹⁹⁰ Fakoya MB 'Carbon tax policy implications for economic growth and unemployment rates in South Africa: a conceptual thought' (2014) 5 *Environmental Economics* 3 at 96.

the success of the tax.¹⁹¹ A mutual relationship of honesty and cooperation between taxpayers and authorities sets the foundation for general compliance with the tax. The public acceptance of the tax may be jeopardised where the tax policy is perceived to be unreasonable and unjust, potentially triggering unforeseen negative consequences such as tax evasion and fraud. The level of support for carbon tax also depends on how authorities go about promoting acceptance and understanding of the policy, and whether the relevant role players and affected parties have been identified and considered in the policy's design process.¹⁹²

Carbon intensive sectors responsible for the largest amount of emissions are most adversely affected by the carbon tax, given that the majority of South Africa's energy is produced using coal and that there is a lack of alternatives available for those that wish to avoid the tax and utilise renewable energy. It is safe to say that the entire economy shall be affected by the tax in some way, be it directly or indirectly.¹⁹³ The increase in production and operational costs caused by the tax impacts all of society, whether directly by payment of carbon tax or indirectly by polluters tax-shifting the burden onto the consumer through increased prices. Although the tax is known to have widespread effects there have been notable efforts on the part of authorities to educate and prepare the public for the carbon tax.

South Africa's carbon tax regime has undergone an extensive public participation process spanning over nine years, following South Africa's attendance at the 2009 United Nations Framework Convention on Climate Change Copenhagen Conference and the publication of the 2010 Budget Announcement.¹⁹⁴ The formal consultation process began in December 2010 after the publication of the Carbon Tax Discussion Paper where the relevant and affected parties were identified and involved in a consultation process with policy makers.¹⁹⁵ A number of opportunities to make representations and provide recommendations where necessary were provided to the public. The National Treasury Media Statement Publication affirms that "processes of public comments and revisions were made after the publication of the second Carbon Tax Policy Paper on 2 May 2019, and the first draft of the Carbon Tax Bill was published on 2 November 2015 following Cabinet approval."¹⁹⁶ The process included public meetings, discussions and opportunity for comment during the policy and draft

¹⁹¹ Konrad-Adenauer-Stiftung 'Carbon Pricing in Sub-Saharan Africa' 2020 at 40.

¹⁹² Hughes R 'Critical Review of South Africa's Future Carbon Tax Regime' Masters Dissertation, University of Cape Town, 2017 at 52.

¹⁹³ Kalaba M 'South Africa's Carbon Tax: Balancing Climate Action and Economic Development' Policy Insights 81, 2020 available at: <<https://saiia.org.za/research/south-africas-carbon-tax-balancing-climate-action-and-economic-development/>> (accessed 15 August 2020) at 2.

¹⁹⁴ National Treasury Media Statement Publication of the 2019 Carbon Tax Act.

¹⁹⁵ National Treasury Media Statement Publication of the 2019 Carbon Tax Act Annexure A.

¹⁹⁶ National Treasury Media Statement Publication of the 2019 Carbon Tax Act Annexure A.

legislation development phases of the Act.¹⁹⁷ Public participation is necessary given the infancy of the concept of a carbon tax in South Africa. Pollution by greenhouse gasses is still so deeply entrenched in society that it is caused by most sectors of commercial activity whether directly or indirectly. Facilitating public participation in the policy-making process promotes transparency. Government authorities and polluters exchange relevant information that is necessary to establish the best policy given the circumstances.

Support for the tax is strengthened where the policy recognises that the circumstances within sectors that are liable to the tax differ to a large degree depending on the nature of the sector, and the policy includes appropriate measures that take this into account. In other words, the policy takes into account the differing circumstances relating to carbon emissions and pollution amongst sectors. Allowances and exemptions are measures included in the policy design that address financial limitations and constraints which industries may face whilst they adapt to the tax. Gradual phasing-in of the tax is indicative of authority's understanding of the financial strain that the introduction of the tax will impose on stakeholders and industries.¹⁹⁸ This approach allows the affected parties opportunity to familiarise themselves with the legislation and make adequate preparations for its operation. The complete exemption of the agricultural and waste management sectors in the first phase provides an advantage for those that fall within these sectors. This aspect of the carbon tax policy design may not be perceived well by other sectors that are not exempted by the tax. Those liable to pay carbon tax within the first phase may harbour some resentment about this differentiation, potentially jeopardising the public view and support of the tax.

Renewable energy sectors (nuclear, wind, hydro, gas and solar) and other industries that rely on low carbon technology are less adversely affected by carbon tax. Carbon taxes may be advantages, as low carbon industries are predicted to have 200 per cent greater output in 2035 than in the absence of a carbon tax.¹⁹⁹ It follows that low carbon energy sectors will become more cost-competitive under a carbon tax as research and development in these sectors becomes increasingly popular. Coal generation is also predicted to become less cost-competitive and is predicted to experience approximately 46 per cent lower output in 2035 than without carbon tax. This may not find good favour with industries that rely on heavy fossil fuel inputs such as mining, infrastructure and

¹⁹⁷ Hughes R 'Critical Review of South Africa's Future Carbon Tax Regime' Masters Dissertation, University of Cape Town, 2017 at 53.

¹⁹⁸ Hughes R 'Critical Review of South Africa's Future Carbon Tax Regime' Masters Dissertation, University of Cape Town, 2017 at 53.

¹⁹⁹ Hughes R 'Critical Review of South Africa's Future Carbon Tax Regime' Masters Dissertation, University of Cape Town, 2017 at 54.

electricity, as demand within this industry decreases over time. This is to be expected given that the fundamental purpose of the tax is to cause environmental reform and discourage this behaviour.

Support for environmental policy is attainable if it is accessible and easily understood by the layperson.²⁰⁰ Carbon tax policy that is written in plain language and presented in simple terms is easier to understand and comply with.²⁰¹ Transparency and openness throughout the planning phases of the legislation regarding the intended use of carbon tax revenues foster confidence in those liable to pay tax, securing a greater chance of compliance.²⁰² Partial earmarking as mentioned above improves political and social acceptance of the tax, and it provides some level of certainty to the public on how the funds generated by the government shall be applied. South Africa has not been entirely forthcoming about the utilisation of revenues from the carbon tax. National Treasury stated that strict earmarking of revenue does not comply with standard financial practices, it introduces rigidities into the budget process, and it does not allow flexibility to adjust the allocation according to government priorities. This could lead to under or over allocation of revenues.²⁰³ The media statement of the Carbon Tax Draft Bill released by National Treasury in 2015 identified some areas where carbon tax revenues can expect to be allocated. These include “funding the energy efficiency tax incentive, a reduction in electricity levy, additional support for free basic electricity for low-income households and development within the public transport sector.”²⁰⁴ Increased direct spending by the government of tax revenues that decrease poverty and provide increased access for the poor to necessities such as electricity, food and transport is likely to attract support from the public.

3.4.4 Legislative Aspects

Important themes regarding the legislative aspects of the carbon tax are the legal framework and the alignment of different legislation that affect the operation of the tax. A coherent framework of legislation informs the development of environmental fiscal reform. The creation of environmental levies on an *ad hoc* or preconceived basis at any level of government must be avoided.²⁰⁵ Fiscal reform policy like any other instrument should be used to maintain and/or enhance the integrity of

²⁰⁰ Hughes R ‘Critical Review of South Africa’s Future Carbon Tax Regime’ Masters Dissertation, University of Cape Town, 2017 at 54.

²⁰¹ Hughes R ‘Critical Review of South Africa’s Future Carbon Tax Regime’ Masters Dissertation, University of Cape Town, 2017 at 54.

²⁰² Hughes R ‘Critical Review of South Africa’s Future Carbon Tax Regime’ Masters Dissertation, University of Cape Town, 2017 at 54.

²⁰³ National Treasury Carbon Tax Bill 2018: Response Document at 14.

²⁰⁴ Ward J and de Battista G ‘Modelling the impact on South Africa’s Economy of Introducing A Carbon Tax’ World Bank Group 2016 at 3.

²⁰⁵ National Treasury ‘A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform in South Africa’ Draft Policy Paper, 2006 at 7.

the policy.²⁰⁶ The Minister of Finance is responsible for tabling all legislation that imposes taxes.²⁰⁷ In terms of the constitutional mandate, the Minister must submit a money bill to Parliament when taxes, duties or levies are imposed.²⁰⁸ National Treasury is the responsible government department for the approval and implementation of tax legislation in conjunction with SARS, the relevant government department responsible for the administration of taxes.²⁰⁹

The legislative framework of carbon tax involves a tax base, taxpayers, the utilisation of revenue across different government sectors, administration, monitoring and enforcement. The carbon tax is a direct tax levied against the CO₂ equivalent emissions of a particular taxpayer. It is regulated by direct legislation, the Carbon Tax Act. A ‘taxpayer’ is a person who is “liable to pay carbon tax in terms of the Act”, and this refers to any person that “conducts an activity in the Republic resulting in greenhouse gas emissions above the threshold determined for that particular activity/sector.”²¹⁰ The Commissioner of SARS must “administer the provisions of the Carbon Tax Act as if it were an ‘environmental levy’ as contemplated in Section 54A of the Customs and Excise Act.”²¹¹ Furthermore, the Act provides that the Customs and Excise Act regulates any matter relevant to the administration of carbon tax that is not included in the Act itself. The 2019 Customs and Excise Amendment Act and Memorandum on the objects of the 2019 Customs and Excise Amendment Bill contain provisions that are related to the administrative arrangements for the collection of carbon tax revenues by SARS. It was split from the Carbon Tax Act into a separate Act for technical and legal reasons, as money bills are prohibited from containing administrative provisions in terms of Section 77 of the Constitution.²¹²

3.4.5 Technical and Administrative viability

The following areas are most important concerning technical and administrative viability of the tax: the design of the tax policy, administrative structures and processes that are efficient in minimising tax collection costs and enforcing compliance. The taxable commodity should be clearly defined and

²⁰⁶ National Treasury ‘A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform in South Africa’ Draft Policy Paper, 2006 at 7.

²⁰⁷ National Treasury ‘A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform in South Africa’ Draft Policy Paper, 2006 at 60; S73 S77 of the Constitution of the Republic of South Africa 1996.

²⁰⁸ S73(2)(a) S77 of the Constitution of the Republic of South Africa 1996.

²⁰⁹ National Treasury ‘A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform in South Africa’ Draft Policy Paper, 2006 at 60.

²¹⁰ S3 of the Carbon Tax Act 15 of 2019.

²¹¹ S15 of the Carbon Tax Act 15 of 2019; S54A of the Customs and Excise Act 91 of 1964.

²¹² S 77 of the Constitution of Republic of South Africa 1996.

“based on a precise and discretely measurable point of pollution.”²¹³ The tax base should be as close to the environmental objective as possible, and it is necessary to consider how the objective is to be achieved. Technical and administrative feasibility of the Act has to do with the practical application of the Act, and the revenues generated from the carbon tax should exceed the administrative and technical cost of collecting it. The carbon tax must make sense and be profitable. Transitioning to a low carbon economy is a realistic ambition in so far as taxpayers can invest in low carbon alternatives and reduce their tax liability. South Africa has limited availability of low carbon alternatives as the majority of energy is supplied by fossil fuels.

Concerning the design of the carbon tax, it is important to note that the rate of the tax is important as it should correspond with the level of the externality. The rate should be set at a level that ensures a specific outcome, to reduce environmental externalities to a level that is acceptable to the public social interest.²¹⁴ South African carbon tax follows an upstream approach, it levies the tax at the source or the closest possible source of the emissions.²¹⁵ It gives effect to the ‘polluter-pays principle’ holding those most closely associated with polluting activities liable to pay the tax. In this way the total number of taxpayers and collection points are minimised, reducing the additional workload for the administrative authorities to collect and enforce the tax.²¹⁶ The tax base covers emissions from fossil fuel combustion, emissions from industrial processes and product use and fugitive emissions. Carbon tax on liquid fuels is levied at the source of the pollution and is in addition to the fuel levy that is already in place.²¹⁷ Environmental policy instruments impose additional costs to polluters; costs that are avoided where such polluters do not comply with the policy in question. Policies and regulations will not be successful in reducing pollution and greenhouse gas emissions if compliance is not adequately monitored and enforced.²¹⁸ Every environmental policy has an enforcement burden, and it is impossible to monitor pollution and emissions where it is impractical and expensive.

²¹³ Delpont E ‘Creating an Effective and Equitable Legal Carbon Taxing Regime for South Africa’ Principles of Environmental Law Thesis, University of Cape Town, 2017 at 39.

²¹⁴ Delpont E ‘Creating an Effective and Equitable Legal Carbon Taxing Regime for South Africa’ Principles of Environmental Law Thesis, University of Cape Town, 2017 at 39.

²¹⁵ Hughes R ‘Critical Review of South Africa’s Future Carbon Tax Regime’ Masters Dissertation, University of Cape Town, 2017 at 56.

²¹⁶ Hughes R ‘Critical Review of South Africa’s Future Carbon Tax Regime’ Masters Dissertation, University of Cape Town, 2017 at 56.

²¹⁷ Hughes R ‘Critical Review of South Africa’s Future Carbon Tax Regime’ Masters Dissertation, University of Cape Town, 2017 at 56.

²¹⁸ Bruce N & Ellis G ‘Environmental taxes and policies for developing countries’ (1993) (Vol. 1177) World Bank Publications at 39.

Tax avoidance and evasion may undermine the effectiveness of the tax and frustrate the objective to cause an overall emissions reduction. It is for this reason that it is important to have a high level of compliance with the policy. Achieving this requires the Act to be easy to monitor and enforce.²¹⁹ The level of compliance also depends on the extent to which tax evasion and avoidance can be policed.²²⁰ As a general matter of principle, the carbon tax is easier to monitor and enforce than income taxes.²²¹ Some factors in the design of the tax make it more simplistic to monitor. The tax is levied on direct greenhouse gas emissions from sources that are owned or controlled by an entity. Therefore, the entity responsible for causing the pollution will be required to pay tax over to the authority. Taxing at the source of the emissions reduces the number of administrative collection points and the number of taxpayers. This alleviates the administrative burden upon SARS. It is relatively easy to monitor the amount of energy consumed through the use of existing measuring methods such as meters and utility bills.²²² The price of energy is also determined by the market. These factors are helpful to safeguard against tax avoidance and evasion, as it is fairly straightforward to ascertain the emissions of a taxpayer and calculate their tax liability. This level of transparency regarding taxpayers' emissions information narrows the scope for taxpayers to unlawfully escape their tax liability. Another important factor to consider regarding compliance with the tax is the availability of non-taxable low carbon alternatives such as renewable energy.²²³

The administration costs associated with implementing a carbon tax is an important aspect to consider as time and labour will be spent to administer the tax.²²⁴ Applying an upstream approach that reduces the number of statutory taxpayers to as few as possible makes it easier for authorities to track and monitor the compliance of the taxpayers. This is an aspect where carbon tax may be better than income tax, as income taxes are levied on many taxpayers that are vastly greater than that of the carbon tax. The Department of Environmental Affairs is the administrative department that supports

²¹⁹ Delpont E 'Creating an Effective and Equitable Legal Carbon Taxing Regime for South Africa' Principles of Environmental Law Thesis, University of Cape Town, 2017 at 40.

²²⁰ Delpont E 'Creating an Effective and Equitable Legal Carbon Taxing Regime for South Africa' Principles of Environmental Law Thesis, University of Cape Town, 2017 at 40; Hughes R 'Critical Review of South Africa's Future Carbon Tax Regime' Masters Dissertation, University of Cape Town, 2017 at 52; National Treasury 'A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform in South Africa' Draft Policy Paper, 2006 at vii 60.

²²¹ Delpont E 'Creating an Effective and Equitable Legal Carbon Taxing Regime for South Africa' Principles of Environmental Law Thesis, University of Cape Town, 2017 at 40; Hughes R 'Critical Review of South Africa's Future Carbon Tax Regime' Masters Dissertation, University of Cape Town, 2017 at 53.

²²² Delpont E 'Creating an Effective and Equitable Legal Carbon Taxing Regime for South Africa' Principles of Environmental Law Thesis, University of Cape Town, 2017 at 41; Hughes R 'Critical Review of South Africa's Future Carbon Tax Regime' Masters Dissertation, University of Cape Town, 2017 at 53.

²²³ Delpont E 'Creating an Effective and Equitable Legal Carbon Taxing Regime for South Africa' Principles of Environmental Law Thesis, University of Cape Town, 2017 at 41.

²²⁴ Delpont E 'Creating an Effective and Equitable Legal Carbon Taxing Regime for South Africa' Principles of Environmental Law Thesis, University of Cape Town, 2017 at 42; Hughes R 'Critical Review of South Africa's Future Carbon Tax Regime' Masters Dissertation, University of Cape Town, 2017 at 54.

SARS in administering the carbon tax by monitoring, reporting and verifying emissions of polluters.²²⁵ Effective collaboration between SARS and the DEA and the relatively small number of taxpayers acts as a deterrent against tax evasion and avoidance. The cost of compliance refers to the expenses which taxpayers should incur to ensure that they meet the standards and requirements of the Act. Taxpayers are required to submit their tax returns based on their assessments of the emissions they produced. The information available at the taxpayers' disposal is easily accessible to the taxpayer in the form of utility bills and existing reporting mechanisms.

3.4.6 Competitiveness Effects

The competitiveness effects of a carbon tax depend on the effect that it has on local industry and firms, international competitiveness, the formal and effective incidence of tax, available mitigation measures such as “reduced tax rates, exemptions, tax refunds, recycling revenues, gradual implementation and the phased in the approach of an environmental tax, border tax adjustments, tax harmonisation and carbon offsets.”²²⁶ Trade exposed firms that cause the highest emissions of greenhouse gasses as a consequence of the nature of their economic activities are directly affected by the tax.²²⁷ The impact on local industries will have implications for persons or groups of persons, and the change in the price of goods and services that are carbon-intensive will be felt by a large number of people, in the form of increased electricity, food, transportation and utility costs. The consequences that this may have on the South African economy has been one of the central arguments against a carbon tax. Economists and understandably carbon-intensive industries believe that a carbon tax will have negative competitiveness effects and hinder economic growth,²²⁸ and that it will pose harm to the international competition between local industries and international competitors.

Carbon taxes are predictable; they are structured in a manner that is straightforward, simplistic and suitable for investment and planning.²²⁹ They create a long-term price signal that can be incorporated into economic projections. A definitive price and timeframes provided by the Act guide investment decisions, steering development away from dependence on fossil fuels. Firms and industries may

²²⁵ Delpont E ‘Creating an Effective and Equitable Legal Carbon Taxing Regime for South Africa’ Principles of Environmental Law Thesis, University of Cape Town, 2017 at 42.

²²⁶ National Treasury ‘A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform in South Africa’ Draft Policy Paper, 2006 at 62.

²²⁷ Delpont E ‘Creating an Effective and Equitable Legal Carbon Taxing Regime for South Africa’ Principles of Environmental Law Thesis, University of Cape Town, 2017 at 43.

²²⁸ Fakoya MB ‘Carbon tax policy implications for economic growth and unemployment rates in South Africa: a conceptual thought’ (2014) 5 *Environmental Economics* 3 at 94.

²²⁹ Hughes R ‘Critical Review of South Africa’s Future Carbon Tax Regime’ Masters Dissertation, University of Cape Town, 2017 at 58.

react in many different ways to an increase in the cost structure. They may reduce their emissions, shifting costs of production onto consumers or they may reallocate and take their business to other countries.

The effect that a carbon tax will have on the international competitiveness of local firms and industries depends on the type of goods or services traded, the market structure and whether the producers are price takers or price setters in the international arena.²³⁰ Carbon tax creates a clear price signal that stipulates timeframes relevant for tax increases, and it outlays the availability of allowances and exemptions. This is relevant to local firms as it steers important future investment decisions in the direction of a low carbon economy.²³¹ Delpont states that “firms competing domestically are in a position to pass the tax burden onto consumers in the form of higher prices – the extent to which the burden can be passed to consumers depends on the price elasticity of demand of the product or service being taxed and the competition from imports.”²³² Goods and services imported from countries that do not impose carbon taxes may be harmful to competition with local industry if protective and mitigation measures are insufficient. Local industries suffer if the products they produce for local consumption are substituted for international industries that are not subject to carbon tax.²³³ Jurisdictions without a carbon tax can sell at lower rates posing an economic risk to local industries that are subject to the carbon tax.²³⁴ This discrepancy provides imported goods with a cost advantage that is harmful to local industries.²³⁵ The loss of revenue that results from businesses shifting their practices to other jurisdictions without a carbon tax or more favourable environmental legislation is a phenomenon known as ‘carbon leakage’. This presents a credible threat to the competitiveness of local industries.²³⁶

²³⁰ Hughes R ‘Critical Review of South Africa’s Future Carbon Tax Regime’ Masters Dissertation, University of Cape Town, 2017 at 58.

²³¹ Hughes R ‘Critical Review of South Africa’s Future Carbon Tax Regime’ Masters Dissertation, University of Cape Town, 2017 at 58.

²³² Delpont E ‘Creating an Effective and Equitable Legal Carbon Taxing Regime for South Africa’ Principles of Environmental Law Thesis, University of Cape Town, 2017 at 46; Van Schalkwyk SG ‘An international comparison of environmental tax with an emphasis on South Africa’ Doctoral thesis, University of Pretoria, 2012 at 63.

²³³ Delpont E ‘Creating an Effective and Equitable Legal Carbon Taxing Regime for South Africa’ Principles of Environmental Law Thesis, University of Cape Town, 2017 at 47; Van Schalkwyk SG ‘An international comparison of environmental tax with an emphasis on South Africa’ Doctoral thesis, University of Pretoria, 2012 at 63.

²³⁴ Fakoya MB ‘Carbon tax policy implications for economic growth and unemployment rates in South Africa: a conceptual thought’ (2014) 5 *Environmental Economics* 3 at 97; Davis Tax Committee ‘Carbon Tax Report: November 2015’ at 17 18 19; Ndebele Z ‘Taxing Economic “Bads”: The Case for a Carbon Tax in South Africa’ Masters Dissertation, University of KwaZulu-Natal, 2016 at 38.

²³⁵ Delpont E ‘Creating an Effective and Equitable Legal Carbon Taxing Regime for South Africa’ Principles of Environmental Law Thesis, University of Cape Town, 2017 at 47.

²³⁶ Delpont E ‘Creating an Effective and Equitable Legal Carbon Taxing Regime for South Africa’ Principles of Environmental Law Thesis, University of Cape Town, 2017 at 47.

There are some measures integrated into the carbon tax policy design that are aimed at mitigating unfavourable competitiveness effects. A phased approach is adopted for implementing carbon tax with announcements of each phase well in advance of the phase; the gradual phasing of the carbon tax allows adequate opportunity for taxpayers to prepare for the financial burden of the tax.²³⁷ During the early transitioning phase, temporary thresholds are set out below to which an exemption from the carbon tax will be given. The basic tax-free threshold is a percentage based on the actual emissions of the taxpayer and it is set at 60 per cent. Tax-free allowances are available for industrial process emissions and fugitive emissions. Sectors such as iron, steel and cement are trade-exposed sectors, and they receive an additional tax-free allowance of 10 per cent. Another tax-free allowance of up to 5 per cent is allocated to the performance against emissions intensity benchmarks or above-average performance. A 5 per cent tax-free threshold is available for firms that are liable to pay a carbon tax during the first phase. Carbon offsets receive a tax-free threshold of 5 to 10 per cent sector dependent. The National Treasury makes provision for various revenue recycling schemes through ‘soft earmarking’ by government whereby authorities nominate several programmes that promote sustainable economic efficacy, reduce poverty and other distortionary taxes.

The exemptions of specific sectors from carbon tax pose other potential risks. Industries that are exempt from carbon tax during the first phase obtain a competitive advantage over those industries that are not exempt. This could result in some unfavourable scenarios: demand is more likely to shift in favour of exempt energy-intensive industries; and firms and industries liable to carbon tax may attempt to be re-categorised as exempt industries and defeat the purpose of the carbon tax on energy consumption and carbon dioxide emissions.²³⁸ The competitiveness effects of carbon taxes do appear to be somewhat overstated.²³⁹

3.4.7 Distributional Aspects

Generally, the most important objectives for developing nations are to improve competitiveness in the economy, reduce poverty, develop infrastructure, increase exports and create more jobs.²⁴⁰ The distributional aspects of the tax refer to the impact of the tax on the distribution of income and on

²³⁷ National Treasury ‘A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform in South Africa’ Draft Policy Paper, 2006 at 77 96; National Treasury Carbon Tax Bill 2018: Response Document.

²³⁸ Hughes R ‘Critical Review of South Africa’s Future Carbon Tax Regime’ Masters Dissertation, University of Cape Town, 2017 at 60.

²³⁹ Hughes R ‘Critical Review of South Africa’s Future Carbon Tax Regime’ Masters Dissertation, University of Cape Town, 2017 at 58.

²⁴⁰ Ndebele Z ‘Taxing Economic “Bads”: The Case for a Carbon Tax in South Africa’ Masters Dissertation, University of KwaZulu-Natal, 2016 at 39.

different income groups, the practicality of the measures in place to mitigate negative outcomes and other equity concerns.²⁴¹ A decrease in employment and other social issues that slow economic progress may stem from the general increase in production costs caused by the carbon tax. Firms and industries must adapt to a new cost structure to survive the shock of the carbon tax and may opt for various strategies such as reducing the number of employees or investing in alternative low carbon technologies.²⁴² In South Africa where energy is predominantly supplied by coal, the carbon tax causes the price of electricity to increase resulting in ripple effects throughout the economy as the cost of introducing taxes can be transferred from energy producers to manufacturers and then ultimately to consumers.²⁴³ The effects of this are felt across the board by those who cause greenhouse gas emissions, use electricity and transport and any other products that emit greenhouse gasses. The risk is that carbon taxes may cause a disproportionately negative impact on the poor.

The effect of the carbon tax on economic growth and distribution of income depends on revenue recycling schemes.²⁴⁴ Where the revenue is utilised to reduce indirect sales taxes, they have a neutral effect on the distribution of income.²⁴⁵ The outcome is likely to favour economic growth and high-income households should revenues be applied in a manner that reduces corporate taxes. However, the overall welfare of the economy will deteriorate. Revenues that are used to increase direct government spending in social programmes improve the economic welfare of low-income households, however, this leads to an overall decline in national income.²⁴⁶

Carbon taxes may create labour market distortions such as unemployment. According to the Living Conditions Survey conducted for 2014/5, approximately 49.2 per cent of South Africans were living below the upper poverty line.²⁴⁷ Sectors such as mining, electricity and transport that are deeply dependent on fossil fuels employ a significant proportion of South Africa's work force. The financial burden from carbon taxes may lead to a decline in labour demand and slow economic growth. A large portion of poor household income goes towards basic needs such as transportation, energy and food.

²⁴¹ National Treasury 'A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform South Africa 2006 63.

²⁴² Ndebele Z 'Taxing Economic "Bads": The Case for a Carbon Tax in South Africa' Masters Dissertation, University of KwaZulu-Natal, 2016 at 38.

²⁴³ Ndebele Z 'Taxing Economic "Bads": The Case for a Carbon Tax in South Africa' Masters Dissertation, University of KwaZulu-Natal, 2016 at 27.

²⁴⁴ Alton T *et al* 'The Economic Implications of Introducing Carbon Taxes in South Africa' United Nations University, Working Paper 2012/46, 2012 at 19.

²⁴⁵ Alton T *et al* 'The Economic Implications of Introducing Carbon Taxes in South Africa' United Nations University, Working Paper 2012/46, 2012 at 19.

²⁴⁶ Alton T *et al* 'The Economic Implications of Introducing Carbon Taxes in South Africa' United Nations University, Working Paper 2012/46, 2012 at 19.

²⁴⁷ StatsSA Living Conditions Survey available online at: < <http://www.statssa.gov.za/?p=12075>>.

The carbon tax is projected to have a direct regressive impact on the income distribution of poor households. This is because they have a less capacity to adapt to increases in the price of basic expenses such as electricity costs. The carbon tax disproportionately affects the poor as they struggle to afford basic essential services as the cost of carbon rises.²⁴⁸ Ward and Battista conclude that carbon taxes will have a minor effect on macroeconomic variables such as employment, consumption and real wages, however, concerns regarding carbon tax and its distributional aspects concern equity, fairness and justice.²⁴⁹

The distributional concerns can be addressed with effective measures that mitigate the disproportionate share of the tax burden, and government support programmes that address poverty and improve access to free basic and cost-effective energy for low-income households. Inequitable distribution outcomes can be alleviated by way of a concerted effort by authorities. It is recommended that direct government spending of the revenues generated from carbon tax should be applied to alleviate the burden on the poor, for example with greater investment into public transport, and support for solar water geysers. Partial earmarking of carbon tax revenues should be for specific programmes that enable job creation and incentives for the poor.²⁵⁰

3.4.8 Adjoining Policy Areas

The extent to which carbon tax is able to assist in meeting other policy objectives is an important consideration. The carbon tax seeks to achieve environmental economic reform, it is therefore important that the tax be aligned with legislative processes and measures.²⁵¹ Where there are a variety of measures in place, carbon taxes and such measures should be mutually supportive of one another, and any potential trade-offs should be identified and addressed.²⁵² The carbon tax should contribute to social and economic objectives, and should operate in cohesion with programmes that seek to create jobs, alleviate poverty and expand basic services of electricity, water and sanitation. The converse should also be true: other policy areas that are in conflict with carbon tax objectives or encourage behaviour that causes harm to the environment must be identified and corrected. Policies

²⁴⁸ Hughes R 'Critical Review of South Africa's Future Carbon Tax Regime' Masters Dissertation, University of Cape Town, 2017 at 64.

²⁴⁹ Hughes R 'Critical Review of South Africa's Future Carbon Tax Regime' Masters Dissertation, University of Cape Town, 2017 at 64.

²⁵⁰ Hughes R 'Critical Review of South Africa's Future Carbon Tax Regime' Masters Dissertation, University of Cape Town, 2017 at 65.

²⁵¹ National Treasury 'A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform in South Africa' Draft Policy Paper, 2006 at 64.

²⁵² National Treasury 'A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform in South Africa' Draft Policy Paper, 2006 at 64.

that conflict with one another lead to confusion and outcomes that may be counterproductive to the objectives of the Act.

National Treasury identified a few tax policy areas that lead to perverse environmental effects that are worth exploring. These effects work contrary to the objectives of the carbon tax. The Income Tax Act provides a deduction for farming or agricultural operations that eradicates noxious plants and prevents soil erosion from any income arising from these operations.²⁵³ This deduction incentivises farmers to clear land and expand agricultural activities, the consequences of which are beneficial or detrimental depending on the land and the circumstances of the particular case. Due to the narrow application of this deduction to only farming and agriculture, landowners are encouraged to clear land for this purpose and intensify biodiversity-related concerns. Furthermore, primary producers and non-freight transport operators are allowed a diesel fuel tax refund under the Customs and Excise Act.²⁵⁴ Primary sectors are the beneficiaries of this rebate, these sectors are most responsible for biodiversity loss, greenhouse gas emissions and environmental harm. The diesel rebate contributes to the growth of the primary sector which runs contrary to the goal of a low carbon economy under the Carbon Tax Act.²⁵⁵ Under the VAT system, farming inputs such as pesticides and fertilisers are zero-rated to minimise the operating costs within the agricultural sector. Zero-rating fertilisers and pesticides also encourage their use. However, they are known to increase surface and groundwater pollution. Incentivising this behaviour is a health risk to local communities including other social costs. Paraffin is also zero-rated for VAT purposes in order to assist the poor. Due to the health and environmental impact of its widespread usage it is clear that this should be discouraged. The areas listed are not an exhaustive list of policy that incentivises harmful environmental behavioural outcomes that are contrary to the objective of carbon tax. Instead, the policy areas listed are a few of many examples that illustrate how certain policies aimed to encourage economic development do not take into account the associated social and environmental costs. Policies such as these work against the notion of a transition to a low carbon economy and undermine the efforts of the carbon tax.

Various stakeholders along with National Treasury recognised the need to investigate the role of tax incentives as a supportive measure to achieve environmental outcomes. Fiscal incentives should embrace the polluter-pays principle whereby the costs imposed on the polluter are always equal to or

²⁵³ National Treasury 'A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform in South Africa' Draft Policy Paper, 2006 at 86.

²⁵⁴ National Treasury 'A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform in South Africa' Draft Policy Paper, 2006 at 86; Customs and Excise Act 91 of 1964.

²⁵⁵ Carbon Tax Act 15 of 2019.

greater than the benefits received from the incentive.²⁵⁶ Environmental funds, an example of a fiscal incentive, are financial mechanisms or tools set up to achieve environmental objectives and direct funding to environmentally focussed programmes. Environmental funds may be beneficial to address long term issues that require a concentrated effort. They are also beneficial where existing agencies are not able to efficiently manage the fund required to tackle the problem, and a community of organisations are capable of dealing with the problem by implementing several programmes to achieve the policy's objectives. This may apply to South Africa that has a history of questionable integrity regarding the handling of state funds. An environmental fund is also an appropriate option for South Africa to safeguard the revenues from the carbon tax and ensure that they are utilised for their intended purpose. An environmental fund must have support from all stakeholders, and this is beneficial as it becomes a platform for role players from different sectors to collaborate. Adjoining policies should embrace the principle of cooperative governance and should work towards economic and environmental sustainability. Inconsistencies and contradictions should be identified and corrected early on to avoid confusion. The carbon tax alone is not sufficient to influence a change in economic behaviour. Environmental reform requires the existence of a strong collective of policies that support the objectives of the carbon tax and vice versa. A shift from a carbon-intensive economy towards a low carbon economy that embraces renewable energy requires a multitude of efforts.

3.5 The Double Dividend

The double dividend requires that both an environmental and financial benefit are achieved. The carbon tax should lead to improved environmental outcomes and economic efficiency. An environmental benefit is secured through behavioural change, decreasing overall dependence on carbon-intensive means of production and opting for new innovative sustainable practices. The financial benefit is achieved where the economy enjoys a form of benefit be it through growth, efficiency or improved wellbeing.²⁵⁷ In South Africa, realising the double dividend is not impossible. Given that global trends are shifting towards renewables and the demand for certain fossil fuels is dwindling, it is inevitable that the future will ensure that South Africa will follow suit. The positive is that South Africa is not only rich in non-renewables, but also well suited to adopt renewable forms of energy. Its geographical location and climate make solar, hydro and wind viable alternatives to coal. Whether South Africa will successfully pursue the double dividend boils down to political will.

²⁵⁶ National Treasury 'A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform in South Africa' Draft Policy Paper, 2006 at 89.

²⁵⁷ Ndebele Z 'Taxing Economic "Bads": The Case for a Carbon Tax in South Africa' Masters Dissertation, University of KwaZulu-Natal, 2016 at 12 13 17 49 56; Fullerton D & Metcalf G 'Environmental taxes and the double-dividend hypothesis: Did you expect something for nothing?' (No. w6199). National bureau of economic research, 1997 at 1-5.

It necessitates that the country's relationship with fossil fuels be called into question. It is pertinent that a definitive stance is taken on how the Carbon Tax Act will be applied to ensure that it achieves the intended purpose of discouraging pollutant behaviour and facilitating inclusive economic transition towards a low carbon future.

The Act cannot achieve environmental economic reform passively on its own, it is a tool that must be actively and responsibly utilised to curb unwanted behaviour and create incentives that encourage desirable behaviour. The use of incentives to achieve the double dividend must therefore lead to actually improved outcomes, for example improved social welfare, sustainable and inclusive economic growth, greater access to clean energy and the creation of green industries. A carbon tax that does not result in some form of environmental or economic outcome harms the perception of the tax and ultimately its potential to achieve its objectives. For the tax to work and the double dividend to be a reality, it must be accepted that the environmental and financial components are interwoven; one cannot exist without the involvement of the other. The environmental benefit requires that the revenues generated from the carbon tax be applied in a manner that is aligned with the environment and that secures long term compliance, public support and observance. This could be through increased direct government spending to poor households, increased access to clean energy, investment into emerging clean and green industries and creation of green jobs. The financial benefit requires that the environmental objective be kept intact. This comes back to political will and effective usage of revenues. Irresponsible usage of the revenues from carbon tax erodes public perception and support and it defeats the integrity of the objective of actually improving environmental outcomes.

The decision to pool carbon tax revenues for general government spending is regrettable. This approach dilutes the potential of the instrument to facilitate environmental economic reform. It detaches the carbon tax from its purpose and is also harmful to public perception and support of the tax. The Carbon Tax Act may be perceived as another attempt by the government to seek funds from already overburdened taxpayers. Therefore, the success of the tax and the double dividend requires sensitive and intentional application of the policy.

3.6 Conclusion

Introducing a carbon tax inevitably produces sectoral winners and losers, depending on the nature of the entity. It must be emphasised that the purpose of a carbon tax is to change consumer behaviour over the long term by using pricing signals and creating incentives. It is to be expected that over time during the process of transition polluting behaviours will dwindle whilst competition and innovation

in green and sustainable environmental behaviours will improve. The Carbon Tax Act is a signal of the South African government's intention to reduce greenhouse gas emissions following its Nationally Determined Contribution in terms of the Paris Agreement. Historically, it has endorsed primary and fossil fuel dependent sectors such as mining and electricity, as their territory is rich in metal, coal and other natural resources. Although it has been the most profitable, this strategy has established the overwhelming dominance of coal-fired fuel power stations as the country's main source of energy. The introduction of the carbon tax has understandably faced resistance from dominant industries that are most responsible for South Africa's pollution, because it would be harmful to economic competition and employment. However, South Africa is a developing country facing increasing unemployment and high levels of poverty. A future trajectory of inaction has been proven to drastically accelerate the effects of climate change, the economic and social costs of which far outweigh the cost of the effort in mitigating its effects. Climate change poses a risk to agriculture, food security and water availability. Negative outcomes that disproportionately fall upon the poor. Therefore, given the status of South Africa's economy, it would make sense that environmental fiscal reform is embraced sooner rather than later. The unpredictable and costly nature of climate change is best avoided altogether although it is unrealistic. South Africa's best defence is to encourage energy efficiency and economic development that is sustainable. As a developing nation, it is more practical to invest in renewable and low carbon technologies as opposed to transferring already established systems.

Resistance against the carbon tax by carbon-intensive industries is a part of the transition process, and adequate measures to mitigate the negative consequences that may arise should be built into the revenue recycling process. A positive aspect of the carbon tax is that it would steer economic research and development in a direction that is economically sustainable and environmentally friendly. South Africa has historically faced problems regarding labour and adequate wages for employees in the primary sector. The conundrum is that carbon-intensive industries seek to increase profits on carbon-intensive activities and reduce other expenses such as labour and wages. The potential of a carbon tax is that it stimulates investment and development in renewable and low carbon industries. These industries tend to be more labour-intensive as they have less reliance on natural resources and depend on labour inputs. This environmental reform is suitable for a country like South Africa with its labour and employment concerns. It may pave the way to a green economy that is circular and values labour and sustainability: a shift away from the current waste-producing linear structure where resources are extracted, consumed and discarded.

A double dividend is achieved in the context of a carbon tax policy if it secures an ‘environmental benefit’ and as a result of its operations it creates a ‘financial benefit’. South Africa’s economic performance has been turbulent over the years showing merely significant growth. As most of the country’s energy is supplied by Eskom Ltd, the increase in electricity prices and utilities from carbon tax impacts the entire economy. This monopolistic structure of the energy sector and lack of alternative energy sources entails that research and development into lower carbon alternatives will have to come from within this sector; until then the economy shall be subjected to increased prices. The energy mix will have to be altered to include clean nuclear energy and renewable energy from solar, hydro and wind to pave the way to a sustainable green economy. South Africa’s carbon tax rate is criticised for being set too low to cause a real influence on consumer behaviour. It does not adequately reflect the social and environmental costs of greenhouse gas emitting activities and the signal it creates for consumers is not proportional to the urgency that the matter requires. The low rate is rooted in the concern for the fiscal and competitiveness impacts that may arise from the tax. It signals to polluters that environmental fiscal reform is to be implemented gradually and that over time the rules regarding greenhouse gas emissions shall become more stringent. Allowances and exemptions act as a concession to carbon-intensive industries. Environmental fiscal reform is unavoidable, it must take place gradually so as not to jeopardise the viability of the economy and place industries at risk. Whether the measures implemented in the Act are capable of securing an environmental benefit can be determined with a sound understanding of how the revenue is to be applied. The plan regarding revenue allocation should be understandable and accessible to the public. Public access to such information instils confidence and support for the tax, and it also enhances accountability on the part of authorities. South African authorities have named several programmes to which funds will be allocated. However, the available information does not provide sufficient detail regarding planned expenditure and what is to be expected in the future. This lack of substance weakens the prospects of realising a double dividend. A carbon tax generates an environmental benefit and improves economic efficiency depending on how the revenue is applied.

Chapter 4: Recommendations for the carbon tax in South Africa

4.1 Chapter Objective

This chapter consolidates the discussion of carbon tax and provides recommendations to improve the feasibility of achieving reduced greenhouse gas emissions and economic growth and development. Put differently, this chapter provides recommendations for a carbon tax regime that subscribes to the double-dividend hypothesis. Carbon tax is the most effective and appropriate tool for South Africa because it imposes the least additional administrative burden on the state, and due to its potential to reap positive rewards and transform the economy into a ‘green economy’ with new industries that have low greenhouse gas emissions profiles and that are also labour-intensive.²⁵⁸ The inherent risks associated with environmental reform and the impact of the tax were found mostly to be slightly overstated.²⁵⁹ The design and manner in which the policy operates play a significant role in the outcome of the tax. The most recent scientific research and literature cannot provide accurate projections of the consequences of the tax, largely due to the unpredictability of climate change, the novelty of the carbon tax in South Africa and not knowing how the economy will react. The reality is that arriving at the best suited policy does depend on experiencing the tax in operation to better understand how it interacts with the economy and what adjustments will be necessary.²⁶⁰

4.2 Recommendations

4.2.1 Policy design and effective tax rate

Changing the status quo and making the carbon tax work for South Africa will be an enormous challenge for government to pull off, given the fragility of the economy. Throughout the discussion in the previous chapter, it was highlighted that the tax rate and the expenditure of revenues from carbon tax is crucial to the success of the tax.²⁶¹ The rate of the tax should be set at an appropriate level, one that matches the urgency of the climate crisis.²⁶² The current effective tax rate is, in my

²⁵⁸ Hagan L ‘Current Issues in Sustainable Development: The Carbon Tax and Sustainable Development’, 2017 at 6 13; World Bank Group ‘*A Carbon Tax Guide: A Handbook for Policy Makers*’ (2017) at 37 38; National Treasury ‘A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform in South Africa’ Draft Policy Paper, 2006 at 18.

²⁵⁹ Hughes R ‘Critical Review of South Africa’s Future Carbon Tax Regime’ Masters Dissertation, University of Cape Town, 2017 at 13.

²⁶⁰ Hughes R ‘Critical Review of South Africa’s Future Carbon Tax Regime’ Masters Dissertation, University of Cape Town, 2017 at 13.

²⁶¹ Ndebele Z ‘Taxing Economic “Bads”: The Case for a Carbon Tax in South Africa’ Masters Dissertation, University of KwaZulu-Natal, 2016 at 60.

²⁶² Delpont E ‘Creating an Effective and Equitable Legal Carbon Taxing Regime for South Africa’ Principles of Environmental Law Thesis, University of Cape Town, 2017 at ; Hughes R ‘Critical Review of South Africa’s Future

view, set too low to place any meaningful pressure on firms to influence planning and decision-making. The low rate appears to be rooted in favour of political and commercial interests, which is unfortunate as it is rather short-sighted.²⁶³ The basic tax-free threshold, allowances, exemptions and rebates in some instances allow taxpayers to reduce their carbon tax liability up to 100 per cent. Part III of the Act at S14 does restrict the taxpayer so that the sum of allowances claimable not does exceed 95 per cent of their total greenhouse gas emissions.²⁶⁴ The limitation of allowances ensures that polluters do pay a portion of their obligations, a minimum of five per cent. It is still problematic as the largest and most intense emitters in South Africa are required to pay carbon tax on a small fraction of their total CO₂ equivalent of greenhouse gases. Although it is necessary to bear in mind the financial implications of the carbon tax on the most carbon-intensive firms, a balance must be struck between ‘softening the blow’ and striving meeting policy objectives. Perhaps a lesser limit on emissions allowances better emphasises behavioural change. The outright exclusion of the agricultural and waste management sectors during the first phase is also contrary to the primary objectives of the Act. This element of the design goes against the intention of reducing greenhouse gas emissions. These sectors remain untaxed although most of the common practices within these sectors are particularly harmful and unsustainable to the environment.

At some point economic behavioural patterns will have to change and compromises will have to be made. Pricing anthropogenic emissions, however complicated, is absolutely necessary to trigger a shift away from fossil fuel dependence. South Africa has a vested interest in action on climate change because of its vulnerability to drought and desertification and other unpredictable consequences.²⁶⁵ A carbon tax that merely amounts to a symbolic gesture will not be effective; it harms the prospect of achieving a positive long-term outcome and fosters negative attitudes towards its fundamental purpose. For the carbon tax to be successful it must be affective in achieving its objectives, to reduce greenhouse gas emissions and raise revenue to finance environmental economic reform. The tax rate should be revised upwards by a greater amount in the second phase to reflect the level of urgency which the climate crisis requires.²⁶⁶ The regressivity of the tax could have serious negative

Carbon Tax Regime’ Masters Dissertation, University of Cape Town, 2017 at 13-4; Maphosa J ‘A Comparative Study of Effectiveness of Green Taxes in South Africa and Developed Countries’ Masters Dissertation, University of Pretoria, 2014 at 64; Ndebele Z ‘Taxing Economic “Bads”: The Case for a Carbon Tax in South Africa’ Masters Dissertation, University of KwaZulu-Natal, 2016 at 49; Winkler H ‘Reducing energy poverty through carbon tax revenues in South Africa’ (2017) 28 3 *Journal of Energy in Southern Africa* at 60.

²⁶³ The low carbon tax rate favours the interests of carbon intensive industries - Hughes R ‘Critical Review of South Africa’s Future Carbon Tax Regime’ Masters Dissertation, University of Cape Town, 2017 at 68; Sumner, J, Bird L, Dobos H ‘Carbon taxes: a review of experience and policy design considerations’ (2011) *Climate Policy*, 11(2),927.

²⁶⁴ S14 Carbon Tax Act 15 of 2019.

²⁶⁵ McCoy B ‘The Price of Carbon: Politics and Equity of Carbon Taxes in the Middle-Income Countries of South Africa and Mexico’ 2015, *Honours Projects*. 31, at 32.

²⁶⁶ Ndebele Z ‘Taxing Economic “Bads”: The Case for a Carbon Tax in South Africa’ Masters Dissertation, University of KwaZulu-Natal, 2016 at 49.

implications for the poor and unskilled labour market. However, the regressive effects of the tax can be appropriately managed if revenues are effectively recycled through targeted tax breaks and government programs.²⁶⁷ Increased access to basic electricity is one of the core objectives of the tax, this could be achieved by direct expenditure by government on solar geysers for the poor. Investment into alternative energy infrastructure is another approach to increase access to electricity. Nuclear powered stations, such as Koeberg in the Western Cape, are capable of providing cheap, clean and reliable energy to South Africans.²⁶⁸ It is a solution worth exploring in the context of the current energy structure that is failing to meet basic demand. The revenue from carbon tax could fund the capital investment into nuclear reactors and restructuring the overall energy mix. This provides a large amount jobs when contracting and creating the infrastructure, and increased fixed employment as employees must be retained to operate and maintain the systems. This solution significantly reduces the cost of energy, increases access for the poor, creates favourable business conditions and reduces carbon emissions close to net zero. The welfare outcome of the carbon tax ultimately depends on how the revenue is used.²⁶⁹

4.2.2 Earmarking of revenue

Most of the research and modelling of carbon tax in the South African economy emphasises the linkage between policy design and the utilisation of revenues. National Treasury is not in favour of full earmarking due to the restrictions it places on the budgetary process and the potential for the misallocation of resources.²⁷⁰ Presently the revenue that carbon tax raises form part of the general government budget. A number of areas where government intends to spend revenue were mentioned, however it is not enough.²⁷¹ The Explanatory Memorandum of the Carbon Tax Bill 2018 lists “a tax credit for the renewable energy premium built into the electricity tariffs, a credit for the electricity generation levy, allocations for free basic electricity or alternative energy and funding for public transport initiatives as revenue recycling measures to minimise the impact of carbon tax in the first phase.”²⁷² Supplementing the general government budget with the revenue raised from the carbon tax

²⁶⁷ McCoy B ‘The Price of Carbon: Politics and Equity of Carbon Taxes in the Middle-Income Countries of South Africa and Mexico’ 2015, *Honours Projects*. 31, at 31.

²⁶⁸ Country Nuclear Power Profiles ‘South Africa’ (2020) available online at: <https://cnpp.iaea.org/countryprofiles/SouthAfrica/SouthAfrica.htm> (accessed 20 September 2020).

²⁶⁹ McCoy B ‘The Price of Carbon: Politics and Equity of Carbon Taxes in the Middle-Income Countries of South Africa and Mexico’ 2015, *Honours Projects*. 31, at 31; Van Heerden J, *et al* ‘Searching for triple dividends in South Africa: Fighting CO₂ pollution and poverty while promoting growth.’ 2006 27(2) *The Energy Journal*.

²⁷⁰ National Treasury ‘A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform in South Africa’ Draft Policy Paper, 2006 at 105.

²⁷¹ Hughes R ‘Critical Review of South Africa’s Future Carbon Tax Regime’ Masters Dissertation, University of Cape Town, 2017 at 68.

²⁷² National Treasury Explanatory Memorandum on the Carbon Tax Bill 2018 at 4.

confers National Treasury wide discretion on how the revenue from the carbon tax should be used. This creates opportunity to deviate from the core purpose of the carbon tax and for revenue to be applied inefficiently. National Treasury emphasises recycling revenues to address the harmful impact on manufacturing and competitiveness in such a manner that it appears to be prioritised over addressing income inequality, reducing poverty and initiating environmental reform.²⁷³ The overall discretion regarding the allocation of carbon tax should be limited, the revenue should be treated separately and earmarked to primarily finance environmental reform, reduce the adverse impact on the poor and protect the competitive interests of trade exposed sectors.²⁷⁴ The planning and expenditure for carbon tax revenue should be outlined in further detail to ensure that the finance is used for its intended purpose.²⁷⁵

Revenues of carbon tax are best used to mitigate the negative competitive concerns that arise from it and increase welfare by engaging with those most negatively affected— carbon-intensive trade-exposed industries and the poor.²⁷⁶ Tax shifting (decreasing distortionary taxes such as corporate income tax and income tax), creating tax incentives for programmes and investments (such as large scale employment opportunities for low skilled labour within up and coming environmentally sustainable industries) and providing targeted assistance for low-income households are appropriate options for South Africa.²⁷⁷ Reducing distortionary taxes may lead to increased employment and investment.²⁷⁸

The carbon tax revenue could assist low skilled and economically inactive people to find employment by creating more employment for workers with limited skills in the low carbon and environmental sectors. A much needed solution for South Africa's unemployment crisis would be to stimulate inclusive technological and structural development away from energy-intensive production and

²⁷³ McCoy B 'The Price of Carbon: Politics and Equity of Carbon Taxes in the Middle-Income Countries of South Africa and Mexico' 2015, *Honours Projects*. 31 at 42.

²⁷⁴ Hughes R 'Critical Review of South Africa's Future Carbon Tax Regime' Masters Dissertation, University of Cape Town, 2017 at 71; Davis Tax Committee 'Carbon Tax Report: November 2015' at 21; Mbadlanyana, T 'The political economy of carbon tax in South Africa—a critical analysis' 2013 *Africa Insight*, 43(1) at 86; Krneta T 'The influence of carbon tax implementation on green growth in South Africa' 2016 at 80.

²⁷⁵ National Treasury 'A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform in South Africa' Draft Policy Paper, 2006 at 101-103; OUTA 'Why is Outa Challenging the Carbon Tax' available at <<https://www.oua.co.za/projects/government-policy/carbon-campaign>> (accessed 21 September 2020).

²⁷⁶ Kidd M 'South Africa's Position on Climate Change: Environmental Law' Juta & Company (Pty) Ltd 2ed 2011 at 301 302.

²⁷⁷ Davis Tax Committee 'Carbon Tax Report: November 2015' at 10; Fakoya MB 'Carbon tax policy implications for economic growth and unemployment rates in South Africa: a conceptual thought' (2014) 5 *Environmental Economics* 3 at 5 3, 96; Ndebele Z 'Taxing Economic "Bads": The Case for a Carbon Tax in South Africa' Masters Dissertation, University of KwaZulu-Natal, 2016 at 46.

²⁷⁸ Winkler H 'Reducing energy poverty through carbon tax revenues in South Africa' (2017) 28 3 *Journal of Energy in Southern Africa* at 23.

consumption, towards higher labour intensity and increased labour participation.²⁷⁹ This can be done by using revenue from the carbon tax to invest in labour training programmes for the unskilled to meet basic requirements for employment in emerging environmental firms, and re-skilling the labour force that was previously employed from carbon-intensive industries to promote an efficient transfer of labour skills into low carbon sectors. Creating green jobs and investing into up-skilling the labour force provides job security, and also mitigates against the concern of job losses that may occur as a result of the impact of carbon tax.²⁸⁰

4.2.3 Improving transparency and accountability

South Africa's unfortunate history of corruption, misappropriation of state funds, state capture and lack of accountability are barriers to the success of the carbon tax. Government officials accused of unscrupulous and corrupt conduct have eroded public confidence in the state's capability to act in good faith.²⁸¹ An implicit duty rests on the state to ensure that measures to improve public perception of the carbon tax are taken. The measures taken to enhance transparency and accountability significantly impact the public support that the tax receives.²⁸² The carbon tax cannot operate effectively without public support, a factor that is often overlooked by legislators and policy makers when implementing reforms. Revenue recycling programmes that ultimately reduce the cost of labour attract support due to their potential to reduce poverty and increase access to employment opportunities in emerging low-carbon industries.²⁸³

Public access to information regarding carbon tax planning, revenue expenditure and outcomes is strongly recommended.²⁸⁴ Access to information that may affect taxpayers' rights and/or interests is a key principle as it promotes transparency and accountability in the process and operation of carbon tax.²⁸⁵ Given the corruption scandals and allegations, it would be beneficial for the public's

²⁷⁹ Schers JC 'Economic growth, unemployment and skills in South Africa: An Analysis of different recycling schemes of carbon tax revenue' Universite Paris-Saclay, PhD thesis, 2018 at 270.

²⁸⁰ Curran P et al 'Seizing the moment in South Africa: overcoming climate policy governance challenges Governance of climate change policy: A case study of South Africa' 2019 available at: <<https://www.lse.ac.uk/granthaminstitute/news/seizing-the-moment-in-south-africa-overcoming-climate-policy-governance-challenges/>> (accessed 25 September 2020).

²⁸¹ Devermont J, Mukulu T 'South Africa's Bold Response to the Covid-19 Pandemic' 2020 for Strategic & International Studies available at: <<https://www.csis.org/analysis/south-africas-bold-response-covid-19-pandemic>> (accessed September 2020).

²⁸² National Treasury 'A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform in South Africa' Draft Policy Paper, 2006 at 69 70.

²⁸³ National Treasury 'A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform in South Africa' Draft Policy Paper, 2006 at 105.

²⁸⁴ Section 32(1) Constitution of the Republic of South Africa; Promotion of Access to Information Act 2 of 2000; Kidd M 'South Africa's Position on Climate Change: Environmental Law' Juta & Company (Pty) Ltd 2ed 2011 at 305.

²⁸⁵ S32(1)(a) Constitution of the Republic of South Africa 1996; Promotion of Access to Information Act 2 2000.

perception of the tax if the planning and expenditure were to be open to the public. Access to information holds government officials accountable and narrows the scope for corruption and misappropriation of funds. It ensures that the carbon tax is applied to achieve its intended objectives. A positive outcome from the carbon tax is more achievable if the government takes steps to change the public opinion of the state's capacity to administer, collect and distribute the tax. Changing the style of governance of public finance to be more transparent is necessary to secure the public's support for such a drastic economic reform. An appropriate legislative intervention would be to develop and implement a "greenhouse gas emissions information management system" that provides accurate and up to date information in real-time regarding the emissions activities of significant emitters and regulators.

4.2.4 Achieving good compliance and strengthening capacity

Achieving compliance with tax obligations requires the right institutional arrangements. As explained in the previous chapter, the level of compliance depends on the scope, design and verification of carbon tax.²⁸⁶ Good compliance with carbon taxes should be straightforward and easy to achieve. Simplifying the process required for taxpayers to comply with carbon tax promotes the overall function of the carbon tax system. Carbon tax policy should be accessible so that taxpayers are able to determine their carbon tax obligations without incurring an additional undue burden that could affect overall compliance. The structures and processes in place to facilitate the collection of carbon taxes should have sufficient mechanisms in place to effectively monitor, report and verify the quantity of emissions and taxes.²⁸⁷ Upstream taxation is the most appropriate design because it places the responsibility and public accountability on primary polluters most closely associated with environmental harm.²⁸⁸ Reducing the number of polluters simplifies the administrative task placed on authorities to collect the tax. This is beneficial because it indirectly strengthens the state's capacity to regulate the tax. It is near impossible to predict with accuracy how the carbon tax will play out in future, even where the most suitable policy is applied at the start. This is because the environment in which the economy operates is fluid and dynamic, and it is constantly changing along with the climate. The measures that those affected by the tax may take will vary according to individual circumstances. Therefore, outcomes and progress of the tax must be monitored and revised on a regular basis. South Africa lacks concise directives on the review process concerning carbon taxes.

²⁸⁶ National Treasury 'A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform in South Africa' Draft Policy Paper, 2006 at 104.

²⁸⁷ Kidd M 'South Africa's Position on Climate Change: Environmental Law' Juta & Company (Pty) Ltd 2ed 2011 at 323.

²⁸⁸ Hughes R 'Critical Review of South Africa's Future Carbon Tax Regime' Masters Dissertation, University of Cape Town, 2017 at 63; National Treasury Explanatory Memorandum on the Carbon Tax Bill 2018 at 4-6.

A continuous process of review is important to provide improvements to the carbon tax where necessary.²⁸⁹ The formation of an Inter-ministerial Committee on Climate Change, as envisaged by the Green Paper, would be suitable to foster the exchange of information, consultation, agreement, assistance and support amongst spheres of government.²⁹⁰ This would achieve greater administrative efficiency and widespread compliance with carbon tax and other environmental legislation.²⁹¹

4.4 International cooperation

Climate change and all its effects are globally generalised and locally specific; therefore, it would be senseless not to mention the importance of international cooperation to effectively address global emissions. Carbon tax is most effective when implemented on an international scale that facilitates a globalised approach to carbon tax.²⁹² The actions taken by individual states, such as South Africa, to reduce emissions would be meaningless in the grand scheme if the responses from other states, especially neighbouring states, were not cohesive. High-income developed nations have made the greatest contribution to the accumulation of greenhouse gases in the atmosphere, having had the capacity to exploit natural resources for profit and development for a longer period in history. The Paris Agreement is based upon Nationally Determined Contributions (NDC) by each party, but the nature of these contributions are non-binding.²⁹³ It is altruistic at best because this system lacks definitive obligations and sanctions for members that fail to honour their obligations or are found to be acting contrary to their commitments.

A meaningful internationally recognised legal instrument that is binding upon states to reduce greenhouse gas emissions is yet to be brought into existence.²⁹⁴ Until a time when such an instrument comes into existence the probability of reducing global greenhouse gas emissions remains uncertain. It is also unrealistic for lower income countries to undertake climate action that is proportional to or similar to that of developed countries. Structural and historical factors such as poverty, unemployment and lack of skills and infrastructure hinder the capacity of developing countries such

²⁸⁹ World Bank Group 'A Carbon Tax Guide: A Handbook for Policy Makers' (2017) at 151.

²⁹⁰ Kidd M 'South Africa's Position on Climate Change: Environmental Law' Juta & Company (Pty) Ltd 2ed 2011 at 323; National Climate Change Response Green Paper 2010 GN 1083 in GG 33801.

²⁹¹ Mcsweeney R, Timperly J 'Carbon Brief profile: South Africa' Carbon Brief' 2018, available at: <<https://www.carbonbrief.org/the-carbon-brief-profile-south-africa>> (accessed July 2020); National Treasury 'A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform in South Africa' Draft Policy Paper, 2006 at 104.

²⁹² Hagan L 'Current Issues in Sustainable Development: The Carbon Tax and Sustainable Development', 2017 at 18.

²⁹³ Kalaba M 'South Africa's Carbon Tax: Balancing Climate Action and Economic Development' Policy Insights 81, 2020 available at: <<https://saiia.org.za/research/south-africas-carbon-tax-balancing-climate-action-and-economic-development/>> (accessed 15 August 2020) at 19; Fakoya MB 'Carbon tax policy implications for economic growth and unemployment rates in South Africa: a conceptual thought' (2014) 5 *Environmental Economics* 3 at 97.

²⁹⁴ Ndebele Z 'Taxing Economic "Bads": The Case for a Carbon Tax in South Africa' Masters Dissertation, University of KwaZulu-Natal, 2016 at 50.

as South Africa to adapt to the cost of climate change.²⁹⁵ Carbon leakage and the associated loss of revenue can be mitigated with implementation of international agreements that regulate carbon taxes. Unfavourable international economic consequences can be better avoided, and the financial interests of the international community can be protected from being lost to business migration. Therefore, the importance of globalised regulation of carbon instruments cannot be overemphasised for international greenhouse gas emissions to peak, plateau and decline before the end of the century.

Relying on a coordinated globalised action to be created and put into effect is not a realistic approach. Although environmental reform policies like carbon tax pose economic and competitive risks to a carbon-intensive developing country like South Africa, it still best supports the nation's interests from an international perspective. South Africa is the first country to implement a carbon tax in Africa. It is advantageous as South Africa could be instrumental in pioneering the discourse of environmental fiscal reform and could take leadership in this regard. South Africa's implementation of carbon tax that is successful could serve as a model to developing nations with limited financial resources and dependence on fossil fuels. This opportunity however should not be wasted. Further delays and inaction risk the country being surpassed, and once again South Africa will need to play 'catch up'.

4.5 Feasibility of the so called 'double dividend'

The double-dividend hypothesis that is linked to implementing a carbon tax cannot be assumed as a general matter of application. The double dividend is achieved where the carbon tax achieves the intended outcome and leads to an actual improvement in environmental outcomes and an increase in revenue. The feasibility of achieving the double dividend requires the best possible policy to be adopted in the light of the context within the economy. Therefore, the carbon tax will have to be tailored and well suited to the circumstances relevant to the economy. Attaining both the environmental and financial benefit depends to a large degree on how the policy is implemented and how the revenues are recycled. It is not accurate to conclude that a financial benefit is achieved merely because a carbon tax generates revenues. Revenue arises by operation of the tax, and it is how the revenues are used that determines whether the financial benefit is actually achieved.²⁹⁶ A reduction in the overall burden on the tax system would constitute a financial benefit. The double dividend refers to the potential rewards that carbon tax is capable of achieving if implemented correctly.

²⁹⁵ ACPC Discussion Paper on post covid-19 and climate change 4; Nakhooda S 'Carbon Taxes In South Africa: The political and technical challenges of pricing carbon' ODI Working Paper 399, 2014 at 6.

²⁹⁶ Fullerton D & Metcalf G 'Environmental taxes and the double-dividend hypothesis: Did you expect something for nothing?' (No. w6199). National bureau of economic research, 1997 at 35; Fakoya MB 'Carbon tax policy implications for economic growth and unemployment rates in South Africa: a conceptual thought' (2014) 5 *Environmental Economics* 3 at 97; Winkler H 'Reducing energy poverty through carbon tax revenues in South Africa' (2017) 28 3 *Journal of Energy in Southern Africa* at 22-23.

Achieving the double dividend requires robust and dynamic revenue expenditure programmes that effectively manage distributional and competitive concerns.

Carbon tax revenues should not be a part of the general government budget, and this has faced major resistance from the public.²⁹⁷ Revenues from carbon tax that form a part of the general government budget are less connected to the fundamental objectives of carbon tax, where they are used for general government spending.²⁹⁸ Using carbon tax revenue to service government debt or for creation of jobs within carbon-intensive sectors is not as closely associated with the objectives of carbon tax as investing in renewable energy and promoting greater access to basic free energy for the poor. Diluting the revenues into general spending also creates mistrust and works against the acceptability of carbon tax in South Africa. The effort to create a strong incentive for the public to change their behaviour would be undermined if the finances raised were utilised in matters not connected to promoting carbon tax objectives.²⁹⁹

Low-carbon technology and alternative renewable energy in South Africa is possible in so far as government is proactive in supporting and facilitating its adoption. Diversifying the energy mix and placing a greater emphasis on renewables is a good start, but more has to be done. The monopolistic structure of the energy sector inevitably means that most of the taxes will be collected from one source and are likely to be passed on to the consumer. Coal persisting to be the dominant form of energy supply makes it near impossible to envisage a transition to a low carbon economy in the future. Ultimately, the rate of change within this sector effectively determines the rate of environmental reform. South Africa regards alternative sources of energy as supplemental to coal as the main source. Without alternative options of renewable energy, consumers will be forced to pay higher prices for items associated with the tax, which was proven to have a disproportionate impact on the poor.

4.6 Conclusion

The South African economy was built upon the assumption that environmental conditions would remain stable over time. Continuing to disregard the impact of human commercial activities on the climate threatens the delicate balance of nature upon which the economy depends. Decisive action to mitigate the onset of drastic and unpredictable effects far outweighs the costs associated with adapting to the uncertainty of an impending global climate disaster. This research questions the workability of the Carbon Tax Act as South Africa's effort to incentivise a national shift away from carbon-intensive

²⁹⁷ Ndebele Z 'Taxing Economic "Bads": The Case for a Carbon Tax in South Africa' Masters Dissertation, University of KwaZulu-Natal, 2016 at 49-50.

²⁹⁸ Delport E 'Creating an Effective and Equitable Legal Carbon Taxing Regime for South Africa' Principles of Environmental Law Thesis, University of Cape Town, 2017.

²⁹⁹ Winkler H 'Reducing energy poverty through carbon tax revenues in South Africa' (2017) 28 3 *Journal of Energy in Southern Africa* at 23.

fossil fuels, and whether it is an instrument capable of changing economic behavioural patterns and preventing a global temperature increase of two degrees Celsius.

Carbon taxes are absolutely necessary to incentivise change to low-carbon energy. The current economic set up is ‘secretly’ subsidising harmful polluting activities that cause carbon emissions by leaving them untaxed. Without an intervention such as carbon tax, environmental externalities that are caused by such carbon-intensive activities will continue to remain the forced incentive.³⁰⁰ It is not a matter of whether the carbon tax is a viable option for South Africa. Rather, what is more important to consider is whether the state is capable of successfully implementing the carbon tax to the extent that it will meet its objectives. The extent to which consumers and taxpayers are able to switch to low carbon alternatives is important to pre-empt how the economy will react to the tax.³⁰¹ The tax is found more likely to be effective at reducing domestic GHG emissions only as a part of a multifaceted climate action strategy and not as a single measure on its own. A holistic approach includes diversifying the energy mix which is key to increasing the options available for alternative energy sources. National Treasury and the Executive will be seeking to inject large amounts of state resources into the economy to resuscitate it from the impact that Covid-19 has brought. It is a pivotal time period as the decisions taken by government will enhance or threaten the nation’s resilience and response to climate change. Economic stimulus packages should prioritise green initiatives and not be tempted by the facade of short-term profits that bare harsh longer-term consequences. The carbon tax is overwhelmingly criticised due to the economic costs it imposes on the economy. This frame of thinking is limiting and rather short-sighted, it fails to consider the possible benefits that may be achieved for society in the medium and longer term such as reduced air pollution, creation of jobs in a labour-intensive low-carbon economy, energy and food security, increased access to energy and poverty reduction.

The Carbon Tax Act is a noble stride in the right direction towards a future green economy driven by low-carbon inclusive growth. However, in its current form it is still a meagre attempt at creating a definitive price signal or inciting a meaningful behavioural shift away from fossil fuels. The low tax rate and uncertainty on the planned revenue expenditure indicate that the policy may be no more than window dressing and become another avenue for revenue collection. Continuous government endorsement of fossil fuels and carbon-intensive industries further strengthens the narrative that climate change is not taken seriously in South Africa and that the implementation of carbon tax will inevitably become nothing more than a fund-raising exercise. It is not impossible to achieve reduced

³⁰⁰ National Treasury ‘A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform in South Africa’ Draft Policy Paper, 2006 at 1-3.

³⁰¹ Winkler H ‘Reducing energy poverty through carbon tax revenues in South Africa’ (2017) 28 3 *Journal of Energy in Southern Africa* at 66.

emissions of greenhouse gases on to peak before 2030 – but it requires major improvements to the Act and the political will.

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