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CARBON TAX ACT 15 OF 2019 AND ITS PRACTICAL IMPLICATIONS ON THE SOUTH AFRICAN MINING SECTOR

By

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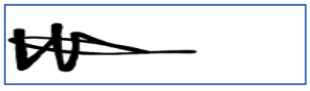
SIGNATURE : 

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ABSTRACT

While the mining sector as an energy-intensive industry has made a significant contribution to the South African national economy, it has equally contributed much to the climate change challenges in the country. The National Climate Change Response paper proposes market-based instruments such as Emissions Trading Schemes and carbon taxation as appropriate to reduce emissions and combat climate change. Further, the carbon tax is the preferred market-based instrument. This is regulated by the Carbon Tax Act 15 of 2019 which came in to effect on 1 June 2019, and has adopted the gradual implementation approach consisting of two phases.

The first phase allows allowances, rebates, and exemptions whereas the second is largely dependent on the success of the first phase. Since its enactment, the Carbon Tax Act 15 of 2019 has been the topic of conversation within the mining sector due to its uncertainties. The Act imposes a tax on CO_2-eq GHG emissions and it aims to facilitate a structural transition to a low-carbon economy however, it is not entirely certain what mining companies should do to reduce their emissions and contribute to the transition to a low-carbon economy. Therefore, the current study aimed to uncover the practical implications of the Act on South African mining companies and the sector in general.

In this instance, the study submits that mining companies should first recognise the urgent need to transition to a low-carbon economy and therefore, commit to the environmental aspect of the ESG. The study further submits that mining companies have to implement changes within their operations that can reduce their emissions, accordingly, escaping their carbon tax liability and contributing to the global effort to transition to a low-carbon economy.

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CAC	Command and Control
CER	Centre for Environmental Rights
COP	Conference of Parties
CO_2	Carbon dioxide
CO_2-eq	Carbon dioxide equivalent
CH_4	Methane
CPI	Consumer Price Inflation
DMRE	Department of Mineral Resources and Energy
ESG	Environmental Social and Governance
ETS	Emissions Trading Schemes
GA	Greenpeace Africa
GDP	Gross Domestic Product
GHGs	Greenhouse Gas
HFCs	Hydrofluorocarbons
IPCC	Intergovernmental Panel on Climate Change
IRP	Integrated Resources Plan
N_2O	Nitrous oxide
PV	Photovoltaic
SADC	South African Development Community
SARS	South African Revenue Services
SCOF	Standing Committee on Finance
SF6	Sulphur hexafluoride
SDGs	Sustainable Development Goals
PFCs	Perfluorocarbons
UNFCCC	United Nations Framework Convention on Climate Change

WTO	World Trade Organisation

KEY WORDS

Carbon Tax; Climate Change; Double-dividend hypothesis; Emissions; Greenhouse Gases; Implication; Implementation; Low-carbon economy; Market-based instruments; Mining; Phased approach; Renewable energy

CHAPTER 1:

INTRODUCTION, BACKGROUND AND RESEARCH METHODOLOGY

1.1. Background to the research problem

Increased concentration of gases known as greenhouse gases (GHGs) in the atmosphere that is emitted by human activities is the prime cause of the increase in average global temperature.[1] There has been a need to effectively address climate changes across the globe and South Africa contributes to these GHG emissions that ultimately result in climate change.[2] Countries have been attempting to achieve the 17 Sustainable Development Goals (SDGs) and South Africa is no exception to these global efforts. Goal 13 of the SDGs deals with the combating of climate change urgently by states as well as the impacts thereof.[3] South Africa intimated its position on the confrontation of climate change and its effects when it became a signatory to the United Nations Framework Convention on Climate Change (UNFCCC)[4] and the Kyoto Protocol.[5]

The signing of the UNFCCC has had enormous stimulus on how states deal with and combat the effect of climate change. South Africa subsequently ratified the UNFCCC in 1997.[6] A few years after the initial signing of the UNFCCC, an agreement providing a framework on how climate change could be tackled globally came into operation.[7] The agreement is referred to as the Paris agreement.[8] As a signatory to the Paris Agreement on 22 April 2016, South Africa is legally bound by the agreement. The legal obligations of signatories are a commitment to this comprehensive framework which will guide international efforts to reduce GHG emissions and tackle possible future challenges.[9] Signatories

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1 National Climate Change Response White Paper 2011 11.

2 The Carbon Brief 'Profile: South Africa' 15 October https://www.carbonbrief.org/the-carbon-brief-profile-south-africa (accessed 21 November 2021).

3 United Nations 'The 2030 Agenda for Sustainable Development: The 17 Goals' https://sdgs.un.org/goals September 2015 (accessed 21 November 2021).

4 United Nations Framework Convention on Climate Change (UNFCCC) (adopted 4-14 June 1992 & 20 June 1992- 19 June 1993, entered into force 21 March 1994), Rio de Janeiro/ New York (9 May 1992).

5 Kyoto Protocol to the United Nations Framework Convention on Climate Change (adopted 11 December 1997, came into effect 16 February 2004), Kyoto Japan (10 December 1997), Reg no. 2303 UNTS 162 (hereinafter 'Kyoto Protocol').

6 Centre for Environmental Rights 'United Nations Framework Convention on Climate Change' https://cer.org.za/virtual-library/legislation/international-instruments/united-nations-framework-convention-on-climate-change-1992 21 March (accessed 21 November 2021).

7 C Sterk *et a*l 'The Paris Agreement: A new Beginning' (2016) 13 *Journal for European Environmental & Planning Law* 4.

8 As above.

9 C Sterk e*t al* (n 7 above) 4- 5.

to the Paris agreement have had to act quickly as the effects of climate change as a result of the GHG emissions are now visible to everyone. South Africa made its commitment to the UNFCCC by laying out its plans to justly transition to an economy with low carbon emissions which in turn was in adherence to the UN's SDGs'.[10] Carbon taxes, compared to other measures that could be taken to alleviate climate change, were considered to be an effective tool that could be adopted by South Africa. [11] The main goal is to ensure that before 2025, emissions produced by the country drop by at least 42 per cent.[12]

The National Climate Change Response Policy essentially outlines how South Africa will tackle the issue of climate change in line with the framework provided.[13] Furthermore, it was acknowledged that a tax on emissions could be a mitigative measure.[14] The carbon Tax policy paper further lays out the distinguishing elements between carbon taxes and emissions trading systems. and why the carbon tax system would be more appropriate for South Africa.[15] Carbon offsets are considered an essential part of the commitment that South Africa has made in its fight against carbon emissions. [16] The Carbon Tax Act was enacted to impose taxes on Carbon dioxide equivalent (CO_2-eq) GHG emissions.[17] The preamble of the Act states that climate change can be traced to the increase in anthropogenic emissions into the atmosphere. The Carbon Tax Act[18] was assented to by the President of South Africa on 22 May 2019 and came into law on 1 June 2019. A carbon tax is considered a Pigouvian tax in that it is corrective in nature and ultimately endeavours to alleviate negative environmental externalities.[19]

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10 National Climate Change Response White Paper (n 1 above) 12- 13.

11 Reducing greenhouse gas emissions: the carbon tax option , discussion paper for public comment from National Treasury, 2010 5-6.

12 Reducing greenhouse gas emissions: the carbon tax option, discussion paper for public comment from National Treasury, 2010 3.

13 National Climate Change Response White Paper 2011 5- 7.

14 National Climate Change Response White Paper (n 1 above) 29. See also, National Treasury Explanatory Memorandum on the Carbon Tax Bill 2018.

15 Carbon Tax policy paper, 2013 9-10.

16 Carbon offsets paper, 2014 6-7.

17 Carbon Tax Act 15 of 2019, hereafter 'the Act'.

18 As above.

19 Z Ndebele 'Taxing Economic "Bads": The case for a Carbon Tax in South Africa' , Unpublished Masters dissertation, University of KwaZulu-Natal, 2016 16.

1.2. Problem statement

The Carbon Tax Act intends to facilitate the just transition objective for South Africa. A phased approach to implementing the Act will be adopted.[20] However, an underlying problem with the phased approach is that the implementation of the second phase of the Act solely depends on the success of the first phase. Moreover, the Act implies that a tax will be imposed for CO_2-eq GHG emissions, providing incentives to taxpayers to ensure that there is a smooth transition to a low-carbon economy. However, it is not clear what this means practically for mining firms intending to reduce their emissions and thus, contributing to the structural transition to a low-carbon economy. This is precisely the problem that this study notes with the Act. Consequently, the study explores the practical implications of the Act on South African mining companies.

1.3. Aims and objectives

1.3.1. Research aim

The study aims to determine the practical implications of the Carbon Tax Act on South African mining companies and the sector in general.

1.3.2. Research objectives

To achieve the aim of the study, it is first necessary to pursue a number of secondary objectives. These objectives will be addressed consecutively in Chapters 2, 3 and 4, and will include examining the market-based instruments and why carbon tax is the preferred market-based instrument in South African. Secondly, the study will scrutinise the phased implementation approach followed in South Africa and outline advantages and disadvantages of the phased implementation approach. It will then determine whether the Act has the potential to facilitate a just transition to a low-carbon economy and ascertain what this means for mining companies.

1.4. Research questions

1.4.1. Primary question

The primary question to be explored in this study is to determine what the practical implications of the Carbon Tax Act on mining companies in South Africa and the sector in general.

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[20] National Treasury Explanatory Memorandum on the Carbon Tax Bill 2018 5; National Treasury Media Statement Publication of the 2019 Carbon Tax Act 1.

1.4.2. Secondary questions

The primary question is complemented by the following secondary questions:

- What are market-based instruments? Further, why is carbon tax the preferred instrument in South Africa?
- What does the phased approach to implementing Carbon Tax Act in South Africa entail and what are the associated advantages and disadvantages for mining companies?
- Can the Carbon Tax Act facilitate a just transition to a low-carbon economy?

1.5. Research methodology

1.5.1. Methodology

This study constitutes a desktop legal analysis study that considers the body of literature on market-based instruments and the reasons for carbon taxes as the preferred instrument to reduce emissions and address the climate change crisis in South Africa. Subsequently, the rationale behind the phased approach is explored, and various provisions of the Act are analysed. The set criteria listed in the National Framework Policy are evaluated to establish the suitability of the Act. Ultimately, this study investigates the practical implications of the Carbon Tax Act on South African mining companies, whether intended or not.

1.6. Relevance of study

This study contributes to the existing academic literature on climate change and carbon taxes in South Africa. It will be useful for future research on these issues, and it will provide a foundation for future research in higher education.

1.7. Chapter overview

This chapter serves as an introduction to the study. It provides the background to the research problem, research problem, research methodology to be applied, research aim and objectives as well as the relevant research questions.

Chapter 2 of the study provides a historical account of the adoption of carbon taxes in South Africa. The chapter provides a detailed explanation of the contribution of GHG emissions to climate change, and it situates the nature of the mining sector as well as its contribution to the South African economy. Further, it considers the market-based instruments and explores why carbon taxes are preferred in a South African context. Additionally, circumstances and events that led to the enactment of the Carbon Tax Act 15 of 2019 will be discussed.

Chapter 3 provides a detailed analysis of the phased approach followed in implementing provisions of the Act as well as the associated advantages and disadvantages of the phased approach. Moreover, various provisos of the Act will be reviewed and a set of established criteria that are listed on the National Framework Policy to establish the suitability of the Act in South Africa will be outlined to critically analyse the Act.

In chapter 4, the study will endeavour to investigate the practical implications of the Act on mining companies and the sector. Further, in this chapter, opportunities at the disposal of mining companies to address climate change and contribute to the transition to a low-carbon economy will be discussed. Different renewable projects that mining companies can invest in and implement will be discussed.

The study concludes by summarising key findings and providing answers to the research questions outlined earlier. This chapter ultimately answers the main aim and question of the study.

CHAPTER 2:

HISTORICAL DEVELOPMENT OF CARBON TAXATION IN SOUTH AFRICA

2.1. Introduction

This chapter provides a historical account of carbon taxes in South Africa and succinctly details the occurrences leading to the adoption of the Carbon Tax Act. In light of the above, the objective of this chapter is to assess what market-based instruments are as well as establish why carbon taxation is the preferred market-based instrument in South Africa. Accordingly, Section 2.2 will provide a brief context of the Greenhouse gas emissions and their contribution to the climate change crisis that the world faces. This will be followed in Section 2.3 by an analysis of the South African mining sector detailing the sector's contribution to the economy of South Africa as well as a discussion on the energy needs and uses of the South African mining sector. Subsequently, Section 2.4 will detail climate change mitigation measures and situate market-based instruments as mitigation tools to quell the effects of GHGs. In this section, a detailed explanation of Emissions Trading Schemes and Carbon Taxes as market-based instruments will be provided. This will be followed by an examination of the advantages and disadvantages associated with these instruments as well as an exploration of carbon taxation as the preferred instrument in South Africa.

Finally, Section 2.5 will provide a historical account of events leading to the development of the Carbon Tax Act in South.

2.2. Greenhouse gas emissions and climate change

Climate change is arguably the biggest peril facing our world today. Climate change has over time led to exponential increases in average annual temperatures.[21] This increase has resulted in unfavourable weather conditions throughout the globe. Further, discussions around these increases causing unabated damage to the earth have ignited an interest in strategies to mitigate the effects of climate change together with the reduction of GHG emissions. For this study, climate change refers to changes in weather conditions.[22] These changes in the earth's weather conditions can be attributed to global warming.[23] Climate change according to the Intergovernmental Panel on Climate Change (IPCC), is the change in climate lingering for an extended period, normally confirmed by irregular barters in the

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21 A Mikhaylov et al 'Global climate change and greenhouse effect' (2020) *Entrepreneurship and sustainability issues* 2897.

22 National Climate Change Response White Paper (n 1 above) 8.

23 As above.

climate qualities.[24] This conception of climate change illustrates the idea that in its occurrence, climate change as the name suggests, results in unforeseen changes in the properties of the climate. Notably, this conception is in slight contrast with the UNFCCC's conception. Article 1 defines climate change as a change in climate resulting from human activity.[25] This change according to the UNFCCC, leads to the reorientation of the global atmosphere.[26] The main difference between the two definitions is that the latter emphasises the involvement of human activity in impelling climate change.

Research shows that human activities such as the incineration of fossil fuel contributes to the change in the climate.[27] There are many attributable factors to climate change, however, GHGs emitted from human activities play a major role.[28] Greenhouse gases refers to gases, notwithstanding their form, that are able to confine heat and essentially re-emit this heat.[29] These gases are thus involved in the continuous cycle of trapping heat resulting from human activities in the atmosphere and releasing them back to earth. Furthermore, the six GHGs that this study focuses on include, Carbon dioxide (CO_2), Methane (CH_4), Nitrous oxide (N_2O), Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs), Sulphur hexafluoride (SF6).[30] The increase in the concentration of these GHGs in the atmosphere results in temperature increases on earth.[31] These interactions result in what is formally known as the greenhouse effect. This refers to temperature increases on the Earth's surface as a result of excess heat in the lower layers of the atmosphere which is the result of the concertation of GHGs.[32] Put simply, the greenhouse effect occurs as a result of the interaction between GHGs and the sun.[33] This phenomenon arguably leads to continued changes in climate as well as the earth's

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24 S Planton 'Annex III: Glossary' in TF Shocker et al (eds) Climate Change 2013: The Physical Science Basis. Contribution of working group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) (2013) 186.

25 United Nations Framework Convention on Climate Change (UNFCCC) 1992 Art 1.

26 As above.

27 National Treasury Discussion Paper for public comment. *Reducing Greenhouse Gas Emissions: The Carbon Tax option* 2010 11.; *See generally,* JW Chen & XS Chen 'No rosy picture for net-zero emissions goal by century end' (2016) 21(6) *Sino-Global Energy* 1-7; *See also*, C Albergel et al 'Observed and Modelled ecosystem respiration and gross primary production of a grassland in Southwestern France' (2010) 7(5) *Biogeosciences* 1657- 1668.

28 National Climate Change Response White Paper (n 1 above) 8.

29 UNFCCC (n 25 above).

30 Kyoto Protocol to the United Nations Framework Convention on Climate Change 1998 Annex A 19.

31 S Manabe 'Role of greenhouse gas in climate change' (2019) 71 *Tellus A: Dynamic Meteorology and Oceanography* 1.

32 A Mikhaylov et al (n 21 above) 2899.

33 DW Kweku 'Greenhouse effect: Greenhouse Gases and their impact on Global Warming' (2018) 17(6) *Journal of Scientific Research & Reports* 3.

temperature. The increased concentration of GHGs in the atmosphere as a result of human activities leads to a rise in temperatures.

2.3. South African mining sector

2.3.1. Mining sector's contribution to the economy of South Africa

Notwithstanding its energy needs and uses, the mining sector has largely contributed to the employment rates in South Africa. It is also a key driver in the accumulation of export earnings and continues to attract direct foreign investments.[34] These contributions by the mining sector are significant in boosting the national economy. The sector is one of the highest contributors to the South African Gross Domestic Product (GDP), and subsequently the economy. The mining sector, directly and indirectly, contributes to employment rates in South Africa[35]. In 2020, it directly accounted for 452 866 of the workforce.[36] The number increased in 2021 to approximately 458 954.[37] This illustrates the contribution and significance of the sector in South African employment rates.

The South African mining sector is also a significant contributor to the accumulation of foreign exchange earnings for the country.[38] Export earnings accumulated by the mining sector in 2021 totalized $56.4 billion which equals R973 836 240 000,00.[39] Moreover, this is a testament to the necessity of the sector to the South African national economy.

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34 Department of Mineral Resources and Energy The Exploration Strategy for the Mining Industry of South Africa 2022 8.

35 Minerals Council South Africa 'Facts and Figures 2020' 14 October https://www.mineralscouncil.org.za/industry-news/publications/facts-and-figures (accessed 06 July 2022).

36 Department of Mineral Resources and Energy The Exploration Strategy for the Mining Industry of South Africa (n 34 above) 8.

37 Minerals Council South Africa 'Facts and Figures 2021' 09 May https://www.mineralscouncil.org.za/industry-news/publications/facts-and-figures (accessed 06 July 2022).

38 J Fedderke & F Pirouz 'The role of mining in the South African economy' (2002) *South African Journal of Economics and Management Sciences* 27.

39 Minerals Council South Africa 'Facts and Figures 2021' (n37 above) 9.

Figure 1: Total commodity sales and exports (Source: World Bank, South African Reserve Bank, Statistics South Africa, Minerals Council South Africa)

The above figure shows commodities that were exported by the South African mining sector in 2021 as well as earnings in total from the exported commodities. Yet again, this supports the argument that the sector earns significantly from foreign exports.[40]

The GDP is an indicator used to appraise the value that is generated by a specific country through its production of goods and services.[41] It measures the value that each country creates. An overall amount of R 480.9 billion is what the mining sector contributed to the South African national economy in 2021.[42] This amounts to an 8.7 per cent contribution to the total GDP of the country.[43] In turn, Huisman argues that these rates and figures exhibit the significance of the mining sector to the well-being of the economy and that should always be acknowledged.[44] Furthermore, it can be argued that the mining sector also contributes to the well-being of other sectors that subsequently contributes to the national economy.

2.3.2. Energy needs and uses of the South African mining sector

As an energy-intensive sector, it is no surprise that the South African mining sector is among the largest sectors consuming energy. To establish the energy needs and uses of the mining sector, it may be necessary to first highlight the main energy supplies in South Africa. In a 2021 report by the Department of Mineral Resources and Energy (DMRE), it was shown that the main energy supply in South Africa was coal.[45] Other energy supplies listed in this report include crude oil, gas, nuclear energy, geothermal energy and lastly, renewable energy.[46]

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40 J Fedderke & F Pirouz (n 38 above).

41 Organisation for Economic Co-operation and Development (OECD) 'Gross Domestic Product indicator' 2022 https://data.oecd.org/gdp/gross-domestic-product-gdp.htm (06 July 2022).

42 Minerals Council South Africa 'Facts and Figures 2021' (n 37 above) 2.

43 Minerals Council South Africa 'Facts and Figures 2021' (n 37 above) 4.

44 L Huisman 'The potential impact of carbon emissions tax on the South African mining industry' unpublished Masters dissertation, North-West University, 2014 40.

45 Department of Mineral Resources and Energy The South African Energy Sector Report 2021 12.

46 As above.

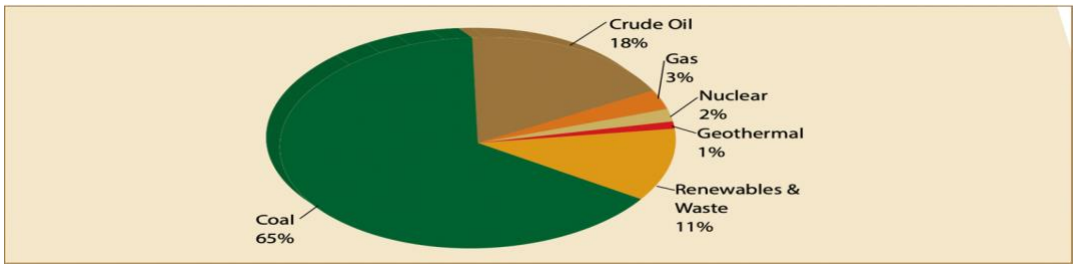

Figure 2: Total primary energy supplier 2018 (Source: Department of Mineral Resources and Energy Balances 2018)

From this figure, it can subsequently be argued that the mining sector is not isolated and that it also relies heavily on coal supply. Moreover, the reliance on coal as a major energy supply leads to what is known as energy instability[47] In 2018, mining and quarrying consumed 10 per cent of the 51 per cent of the energy that the industrial sector generally consumed.[48] This means that in the industrial sector, mining was amongst some of the largest consumers of energy. The high consumption rates of energy in the mining sector expose the nature and the inevitability of the sector to require and use high volumes of energy daily.

2.4. Climate change mitigation and market-based instruments

The South African adopted climate change mitigation strategy is laid out in the National Climate Change Response.[49] This approach attempts to appropriately respond to the calamity of climate change and is founded on two constituents. Firstly being, South Africa's commitment to the global effort to limit GHGs and secondly, the ability to address development issues such as poverty and employment rates.[50] Although Command and Control (CAC) regulations may also be useful in mitigating climates and the effects thereof, this study focuses strictly on market-based instruments.[51] An ideal mitigation approach facilitates the development of the country and provides appropriate market-based instruments.[52] Ndebele argues that, in mitigating and responding to the climate change crisis, market-based instruments are effective.[53]

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47 Department of Mineral Resources and Energy (n 34 above) 5.

48 Department of Mineral Resources and Energy (n 34 above) 21-22.

49 National Climate Change Response White Paper (n 1 above)

50 National Climate Change Response White Paper (n 1 above) 25.

51 National Treasury Discussion Paper for public comment. Reducing Greenhouse Gas Emissions: The Carbon Tax option (n 27 above) 25.

52 National Climate Change Response White Paper (n 1 above) 28.

53 Z Ndebele (n 19 above) 22.

2.4.1. Emissions Trading Schemes (Cap & Trade) and Carbon Taxation

Emissions Trading Schemes (ETS) and Carbon Taxes as market-based instruments adopt the polluter pays principle.[54] They do this by pricing those polluting in an attempt to invoke a change in behaviour and business practices which would ultimately lead to a reduction in GHG emissions.[55] In making a case for market-based instruments, Greaver holds that less intrusion required by these instruments makes them even more economical.[56] In this instance, revenue is raised while addressing the issue of climate change. Market-based instruments are thus instruments meant to revolutionise behaviours within the market by way of pricing.

ETS regulates emissions by placing a cap on quantity and allots permits for emissions trading.[57] These permits are then used by emitters in trading with one another.[58] Emitters are able to reduce their GHG emissions as well as utilise energy efficiently. In designing this instrument, the amount of cap to be placed has to be determined, its coverage has to be considered as well as the obligations of emitters.[59] Carbon Taxes are directly applied to GHG emissions and they are aimed at the reduction of these emissions.[60] A price is placed on emissions by dint of taxing goods for any emissions they may produce.[61] The result, therefore, is that taxpayers would look into alternative ways to reduce emissions. Carbon taxes are unavoidable payments made by taxpayers for their carbon emissions.[62] Taxpayers pay a predetermined price for their GHG emissions or attach a price that correlates with the taxpayers' CO_2-eq GHG emissions. However, according to Greaver, their ultimate objective is to ensure that taxpayers pay for the reduction of their GHG emissions and again for unreduced.[63]

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54 European Court of Auditors The polluter pays principle: Inconsistent application across EU environmental policies 2021 4; L Huisman (n 48 above) 18.

55 National Treasury Discussion Paper for public comment. Reducing Greenhouse Gas Emissions: The Carbon Tax option (n 27 above) 25.

56 AM Greaver 'The Carbon Tax Act 15of 2019 and the double-dividend hypothesis' unpublished Masters dissertation, University of Pretoria 2021 18.

57 National Treasury Discussion Paper for public comment. Reducing Greenhouse Gas Emissions: The Carbon Tax option (n 27 above) 27.

58 P Ekins 'Carbon Taxes and Emissions Trading: Issues and Interactions' in MS Andersen & P Ekins (eds) *Carbon Energy Taxation: Lessons from Europe* (2009) 242.

59 National Treasury Discussion Paper for public comment. Reducing Greenhouse Gas Emissions: The Carbon Tax option (n 27 above) 28.

60 JL Ramseur et al 'Carbon Tax: Deficit reduction and other considerations' in N Viveiros (ed) *Carbon Taxes: Elements, considerations, and objectives* (2013) 1; National Treasury Discussion Paper for public comment. Reducing Greenhouse Gas Emissions: The Carbon Tax option (n 27 above) 27.

61 World Bank Group Carbon Tax Guide: A handbook for policy makers 2017 27.

62 United Nations Handbook on Carbon Taxation for developing countries 2021 23.

63 AM Greaver (n 55 above) 21.

Arguably, the overall goal of these taxes is to ensure that taxpayers account for their emissions and collect revenue. This is known as the double-dividend hypothesis. [64]

2.4.2. Advantages and disadvantages of market-based instruments

Carbon taxes are cost-effective because they require less interference, and they can be implemented easily through instruments that already exist. [65] This is especially the case for South Africa, wherein Carbon taxes are imposed in terms of the Carbon Tax Act 15 of 2019 and the Excise and Customs Act.[66] Thus, the administration of carbon taxes is less complicated. ETS are cost-efficient for taxpayers in that they have autonomy regarding the approach to be followed.[67] Moreover, because of the emissions permits' tradability, costs associated with this instrument can be low.[68] As both instruments adopt the 'polluters pay principle', they can generate revenue for governments and as shown above, they are both cost-efficient. Further, with carbon taxes, there is a guarantee that most, if not all sectors will pay taxes in some way.[69] Perhaps the main advantage of ETS is that they result in the attainment of reduced emissions which is the main reason for the adoption and implementation of these mitigation strategies.[70]

Implementation of both the ETS and Carbon Tax has inevitable shortcomings to be addressed. The main challenge presented by carbon taxes is that during implementation it is not easy to ascertain whether the emissions projected to be reduced will be reduced within a specified period.[71] This is especially true with the carbon tax implementation approach followed in South Africa, wherein a phased approach is adopted.[72] Carbon taxes are often faced with a lot of political resistance, especially from carbon-intensive sectors such as the mining sector.[73] Internal conflicts resulting from political resistance can be attributed to the fact that governments, especially in South Africa are aware of the contribution of the mining sector to the national economy. The Carbon Tax Act grants taxpayers allowances that are argued to have the effect of deeming it rather weak, essentially making it difficult

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64 D Fullerton & GE Metcalf 'Environmental taxes and the double-divided hypothesis: Did you really expect something for nothing?' (1997) *National Bureau of Economic Research* 1.

65 United Nations Handbook on Carbon Taxation for developing countries (n 61 above) 22.

66 Act 91 of 1964.

67 RS Avi-Yonah & DM Uhlmann 'Combating Global Climate Change: Why a Carbon Tax is a better response to global warming than Cap and Trade' (2009) *Stanford Environmental Law Journal* 28 6.

68 United Nations Handbook on Carbon Taxation for developing countries (n 61 above).

69 As above.

70 United Nations Handbook on Carbon Taxation for developing countries (n 61 above).

71 RS Avi-Yonah & DM Uhlmann (n 65 above) 46.

72 National Treasury Explanatory Memorandum on the Carbon Tax Bill (n 20 above).

73 RS Avi-Yonah & DM Uhlmann (n 65 above) 45.

to achieve the ultimate goal of adopting the Act.[74] ETS are criticised mainly for the challenges their present in their administration.[75] Huisman argues ETS generally place a heavy burden on organisers.[76] Another noticeable drawback with this instrument is that it is not clear whether emitters will be encouraged to invest in technologies that will emit less CO_2.[77] This is particularly a test of the uncertainty in costs associated with this instrument and it may lead to reluctance from investors. Despite underlying and apparent disadvantages associated with a carbon tax, it is still a preferred market-based instrument for South Africa.

2.4.3. Preferred instrument in South Africa

Carbon taxation is the preferred market-based instrument to mitigate climate change in South Africa.[78] Following the signing of the Paris Agreement on Climate Change, South Africa not only made clear its stance on climate change but also embarked on a review of different market-based instruments to ascertain which one would be suitable in the current socio-economic and political context.[79] Ultimately, with the carbon tax system in South Africa, the government aims to address the impacts it might have on low-income households which would explain the rationale for adopting carbon taxation in South Africa.[80] Efforts by made countries such as Australia and China includes imposing a $20 carbon tax per ton and contributions to the government's decision to take decisive action against climate change.[81] This is because South Africa is a carbon-intensive economy and implementing policies to address climate change signals a transition to a low-carbon economy.[82]

However, the main reason carbon taxes are the preferred instrument for South Africa are outlined in the National Treasury's discussion paper.[83] The reasons cited in the paper include some noticeable drawbacks with ETS deeming them ineffective for South Africa. Improbability regarding the achievement of environmental goals, apparent discrepancy regarding dividends. ETS do not explicitly

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74 Carbon Tax Act 15 of 2019; RS Avi-Yonah & DM Uhlmann (n 65 above) 48.

75 United Nations Handbook on Carbon Taxation for developing countries (n 62 above) 22-23.

76 L Huisman (n 44 above) 23

77 United Nations Handbook on Carbon Taxation for developing countries (n 62 above) 22-23.

78 Reducing Greenhouse Gas Emissions: The Carbon Tax option (n 27 above) 29.

79 As above.

80 National Treasury Discussion Paper for public comment. Reducing Greenhouse Gas Emissions: The Carbon Tax option (n 27 above) 4.

81 T Alton et al 'Introducing carbon taxes in South Africa' (2014) *Applied Energy* 116 345.

82 As above.

83 National Treasury Discussion Paper for public comment. Reducing Greenhouse Gas Emissions: The Carbon Tax option (n 27 above) 29.

show exact costs to business and lastly, problems resulting from set targets.[84] In order to understand how the Act was developed, it is first important to establish the historical context.

2.5. Developing a carbon tax for South Africa

2.5.1. Background

The UNFCCC negotiated instrument is a recognised instrument that responds to and addresses the climate change crisis by providing guidelines on how countries should mitigate climate change.[85] Article 2 of the UNFCCC lays out the objective of the framework and it states that its objective is to stabilise GHG concentrations in the atmosphere and flatten the risk of emissions interfering with the climate.[86] The convention attempts to change human behaviour. Having ratified UNFCCC in 1997 and being an active party to it, South Africa made clear its position on climate change and its intention to address the issue. Parties to the UNFCCC normally meet at a meeting called the Conference of Parties (COP) to the UNFCCC. The COP makes decisions for the UNFCCC, and it represents state parties to the convention.[87] The COP convenes every year to discuss and review changes made by parties to stabilise concentrations of GHG emissions in the atmosphere.

After the negotiation of the UNFCCC, a binding agreement which accords with the provisions of the convention was adopted and it is known as the Kyoto Protocol to the UNFCCC.[88] The Kyoto protocol was adopted in 1998 and it binds state parties to implement policies that encourage efficient use of energy, developing alternative forms of energy such as renewable energy, and doing away with practices that contribute to climate change.[89] Art 12 of the Kyoto Protocol defines the clean development mechanism under which developing countries not mentioned in Annex I, such as South Africa should be assisted in the transition phase to contribute towards the main objective of the UNFCCC.[90] Ndebele states that, although developing countries as stated in Art 12 are not bound by the reduction targets set, their participation towards achieving the ultimate goal of the UNFCCC

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84 As above.

85 Z Ndebele (n 19 above) 10.

86 United Nations Framework Convention on Climate Change (UNFCCC) (n 4 above) Art 2.

87 UNFCCC 'Conference of Parties' https://unfccc.int/process/bodies/supreme-bodies/conference-of-the-parties-cop (accessed 12 July 2022).

88 M Madondo & HM Nkwana 'Exploring South Africa's National Climate Change Response White Paper, 2011: Challenges and prospects for public policy' (2011) 29 *Administratio* Publica 188.

89 Kyoto Protocol to the United Nations Framework Convention on Climate Change (n 5 above) Art 2 (1) (a).

90 Kyoto Protocol to the United Nations Framework Convention on Climate Change (n 5 above) Art 12.

should be guided by the clean development mechanism.[91] As a developing country and despite having no obligation to accept set reduction targets, South Africa being a carbon-intensive economy stated at Copenhagen that it would commit to actions that mitigate climate change which would see GHG emissions drop in 2020 by 34 per cent and leading to a significant drop by 42 per cent in 2025.[92]

In 2010, supplementing the 2006 policy paper titled Environmental Fiscal Reform Policy Paper, the National Treasury published a discussion paper open for comments titled Reducing Greenhouse Gas Emissions: The Carbon Tax option.[93] This paper acknowledges South Africa's commitment to addressing climate change by reducing the emitted GHGs as well as an obligation to ensure that in this transition issues such as employment, poverty, and inequality are addressed.[94] Indeed South Africa's endorsement of the UNFCCC and the Kyoto protocol seemingly portends its positionality and intention to address the global-wide fight against climate change.

The 2011 National Climate Change Response white paper outlines the obligations that South Africa has stemming from the endorsement of both the UNFCCC and the Kyoto Protocol. These obligations include the formulation and the steady updates of mitigation policies and an ability to feasibly address the impacts of climate change.[95] Secondly, the country has an obligation to report its GHG reserve and show measures taken to address provisions of the UNFCCC.[96] There is also an obligation to advance holistic climate change mitigation plans.[97] Additionally, climate change issues must be featured in a wide range of policies that the government adopts.[98] The need to collectively advance any GHG related issues. Developing research that addresses issues beyond national jurisdiction.[99] Finally, disseminating knowledge on the climate change crisis and its impacts.[100] To this end, these obligations establish accountability on South Africa to the global community with regards to its climate change mitigation plans.

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91 Z Ndebele (n 19 above) 12.

92 National Treasury Discussion Paper for public comment. Reducing Greenhouse Gas Emissions: The Carbon Tax option (n 27 above) 3.

93 Reducing Greenhouse Gas Emissions: The Carbon Tax option (n 27 above)

94 As above.

95 National Climate Change Response White Paper (n 1 above) 9.

96 As above.

97 As above

98 As above.

99 National Climate Change Response White Paper (n 1 above) 9-10.

100 National Climate Change Response White Paper (n 1 above) 10.

The white paper aims to facilitate a climate change mitigation plan as well as provide an outline of the way this would happen. Put simply its main objectives are to mitigate climate change and provide for the climate change adaptation approach that will be followed.[101] The 2015 Paris Agreement — signed by South Africa in 2016 — aims to bolster an attempt to address the calamity of climate change through its signatories.[102] As has been shown in 2.4.3, South Africa chose carbon tax as the preferred instrument to address climate change and achieve the ultimate objective of the UNFCCC.

2.5.2. Enacting the Carbon Tax Act 15 of 2019

The roadmap leading to the enactment of the Carbon Tax Act provides context and shows the role played by different stakeholders. In 2006, a draft policy paper titled *A framework for considering market-based instruments to support environmental fiscal reform in South Africa* was published by the National Treasury.[103] This policy paper aims to make a case for market-based instruments and subsequently argues for the introduction of appropriate environmental tax instruments in South Africa.[104] Supplementing the draft policy paper of 2006, the *Discussion Paper for public comment. Reducing Greenhouse Gas Emissions: The Carbon Tax option* of 2010 subsequently discusses, the viability of introducing a carbon tax in South Africa.[105] It expresses that a carbon tax would not be of cost to the economy and further recommends that this would be possible if it is set at R75 per ton of CO_2 with an increase of around 37,5 per cent which is R200 per ton of CO_2.[106] Following this, the National Climate Change Response White Paper was published in 2011 and it responds to the increased GHG concentrations while ensuring that sustainable development goals are reached.[107]

In 2013 a policy paper for public comment was published and it served as an updated version of the 2010 discussion paper.[108] It introduces the phased implementation approach. The carbon tax rate

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101 M Madondo & HM Nkwana (n 82 above) 193.

102 C Sterk *et a*l (n 7 above) Art 2.

103 National Treasury A framework for considering market-based instruments to support environmental fiscal reform in South Africa: Draft Policy Paper 2006 3.

104 National Treasury A framework for considering market-based instruments to support environmental fiscal reform in South Africa: Draft Policy Paper (n 103 above) 39.

105 National Treasury Discussion Paper for public comment. Reducing Greenhouse Gas Emissions: The Carbon Tax option (n 27 above) 4.

106 National Treasury Discussion Paper for public comment. Reducing Greenhouse Gas Emissions: The Carbon Tax option (n 27 above) 9.

107 National Climate Change Response White Paper (n 1 above) 10.

108 National Treasury Carbon Tax Policy Paper: Reducing greenhouse gas emissions and facilitating the transition to a green economy 2013 7.

proposed by the policy paper was R120 per ton of CO_2, to be increased by 10 per cent each year.[109] Additionally, the *Carbon Offsets paper* of 2014 defines carbon offset as the 'measurable circumvention or the reduction thereof of GHG emissions.[110] The main objective of offsetting carbons is to encourage further investment in projects that will not result in heavy emissions of GHG. The offsets paper further shows that these projects include biological sequestration, renewable energy, energy efficiency and lastly reducing other GHG emissions.[111] Despite the progress made with the adoption of the Carbon Tax Act, it was only enacted in 2019 after being postponed from 2015 to 2016.[112]

The publishing of the 2015 Draft Carbon Tax Bill by the Minister of Finance saw comments and observations that needed to be addressed.[113] The Centre for Environmental Rights (CER) while acknowledging the importance of enacting a carbon tax in South Africa to counter the concentration of GHG emissions, it had reservations that needed to be addressed.[114] Overall, CER expressed apprehensions about the inefficacy of the bill significantly reducing GHG emissions, especially with R120 per ton of CO_2, ultimately CER argues for transparency regarding revenues generated through the tax and scrapping of the carbon offsets allowance.[115] Additionally, the bill did not consider the effects of introducing carbon taxation on households and the resultant difficulties in implementing the tax regime.[116] These reservations expose a gap in the carbon tax regime to meet the ultimate objective of the UNFCCC.

Comments on the 2015 Draft Carbon Tax Bill prompted the re-release of the Draft Carbon Tax Bill in 2017. The 2017 Draft Carbon Tax Bill essentially introduces the phased approach to be followed in implementing the Act.[117] The phased approach acknowledges developments that have been made by other countries that are not necessarily faced with issues around development.[118] The carbon rate in

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109 National Treasury Carbon Tax Policy Paper: Reducing greenhouse gas emissions and facilitating the transition to a green economy 2013 15.

110 National Treasury Carbon Offsets Paper 2014 12

111 National Treasury Carbon Offsets Paper (n 98 above).

112 R Hughes 'Acritical review of South Africa's future carbon tax regime', unpublished Masters dissertation, University of Cape Town, 2017 7.

113 National Treasury Draft Carbon Tax Bill 2015.

114 Centre for Environmental Rights 'Written comments on the Draft Carbon Tax Bill,2015' 7 December https://cer.org.za/wp-content/uploads/2015/12/CER-Comments-on-Draft-Carbon-Tax-Bill-7-December-2015.pdf 1 (accessed 12 July 2022).

115 Centre for Environmental Rights (n 102 above) 2.

116 As above.

117 Nation Treasury Draft Carbon Tax Bill 2017.

118 National Treasury Explanatory Memondarum for the Carbon Tax Bill 2017 http://www.treasury.gov.za/public%20comments/CarbonTaxBll2017/Draft%20Carbon%20Tax%20Bill%20December%202017.pdf 2 (accessed 12 July 2022).

this bill remained at R120 per ton of CO_2. The Draft Carbon Tax Bill attracted comments and reservations from various stakeholders, thus for the purpose of this study only comments from two stakeholders will be highlighted. Jointly, CER together with Greenpeace Africa (GA) argued that the carbon rate does the opposite of what the tax regime aims to do which is to change behaviours which ultimately means that it will be difficult to notice the diminution of GHG emissions.[119] Simply put, the measure is criticised for failing to make the South African carbon tax consistent with the worldwide end aim of lowering GHG emissions in the atmosphere and addressing the catastrophe of climate change.

The constitutional protection afforded to the environment and everyone in Section 24(b), justifies the implementation of the Carbon Tax Act in South Africa.[120] Carbon tax as a Pigouvian tax is administered as an environmental levy under Section 54A of the Customs and Excise Act.[121] Further, an environmental levy in terms of the Customs and Excise Act is paid as a carbon tax.[122] The Carbon Tax Act 15 of 2019 came into effect on 1 June 2019 and it introduce and imposes a tax on CO_2-eq GHG emissions.

2.6. Conclusion

The objective of this chapter was to assess what market-based instruments are as well as establish why carbon taxation is the preferred market-based instrument in South Africa. Human activities such as the incineration of fossil fuel, research shows contributes to the change in the climate. Although there are other factors leading to the climate change crisis, GHGs emitted from human activities play a major role. Thus, mining is considered a human activity contributing to this problem. Notwithstanding its energy needs and uses, the mining sector has largely contributed to the employment rates in South Africa. As an energy-intensive sector, it is no surprise that the South African mining sector is amongst the largest sectors consuming energy. The South African adopted climate change mitigation strategy as laid out in the National Climate Change Response suggests two reasons upon which attempts to appropriately respond to the calamity of climate change are founded. Firstly being, South Africa's commitment to the global effort to limit GHGs and secondly, the ability to

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119 CER & Greenpeace Africa 'Written comments on the Draft Carbon Tax Bill, 2017' 29 March 2018 https://cer.org.za/wp-content/uploads/2018/04/CER_GP-Submission-on-Carbon-Tax-Bill-2017-29.03.2018.pdf 2-3 (accessed 12 July 2022).

120 Sec 24(b) of the Constitution of the Republic of South Africa, 1996 states that: "Everyone has the right to have the environment protected, for the benefit of the present and future generations, through reasonable legislative and other measures".

121 Carbon Tax Act 15 of 2019 sec 15(1).

122 Customs and Excise Act 91 of 1964 sec 54A.

address development issues such as poverty and employment rates. It further suggests market-based instruments as appropriate to respond to the climate change crisis in a South African context. The two market-based instruments outlined are the Emissions Trading Schemes and Carbon Taxes. The preferred instrument in South Africa is carbon taxation and this is attributed to the challenges presented by ETS which led to the pursual of carbon taxes as the most appropriate instrument for South Africa including administrative difficulties that they present. Improbability regarding the achievement of environmental goals, apparent discrepancy regarding dividends, ETS do not explicitly show exact costs to business and lastly, problems resulting from set targets. Carbon tax as a Pigouvian tax is administered as an environmental levy under Section 54A of the Customs and Excise Act. The Act came into effect on 1 June 2019 and it introduce and imposes a tax on CO_2-eq GHG emissions.

The subsequent chapter explores and investigates the Carbon Tax implementation approach, thus the phased approach, and outlines various stipulations of the Act. The set of criteria listed to review environmental taxes is visited to determine the effectiveness of the Carbon Tax Act.

CHAPTER 3:

SOUTH AFRICA'S CARBON TAX ACT

3.1. Introduction

This chapter examines aspects of the Carbon Tax Act in detail. As such, the objective of this chapter is to analyse the phased implementation approach as followed by South Africa and investigating its associated advantages and disadvantages. In this case, Section 3.2 provides a brief overview on the implementation of the Act. In this section, a discussion on the various phases as well as their advantages and disadvantages will future. This will be followed by Section 3.3 outlining the various fundamental provisions of the Act. The sections are group as follows — the imposition of the tax, allowances, and administration of the Act. Subsequently, this will lead into a critical analysis of the Act in Section 3.4 where in the established criteria used to assess any environmentally-related taxation will be discussed and used to assess the aptness of the Act in South Africa.

3.2. Implementing the Act

As outlined in paragraph 1.1, the Carbon Tax Act 15 of 2019 came into effect on 1 June 2019. The Carbon Tax Act implores to impose taxes on CO_2-eq GHG emissions.[123] Since the Act endeavours to facilitate a smooth and just transition to a low-carbon economy, it is implemented in phases.[124] The phased approach as proposed ensures that there are no adverse effects on the economy, this is especially crucial for the carbon-intensive economy of South Africa.[125] The explanatory note alludes to the intention of the phased approach by avowing that:

> *"To cushion the potential adverse impacts on energy-intensive sectors such as mining and iron and steel, the introduction of the carbon tax for the first phase will not have an impact on the price of electricity."*[126]

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123 Carbon Tax Act 15 of 2019.

124 National Treasury Explanatory Memorandum on the Carbon Tax Bill (n 20 above) 3.

125 Davis Tax Committee Report on a Carbon tax for South Africa November 2015 https://www.taxcom.org.za/docs/20171110%20DTC%20report%20on%20carbon%20tax%20-%20on%20website.pdf 13 (accessed 12 July 2022).

126 National Treasury Explanatory Memorandum on the Carbon Tax Bill (n20 above) 4.

In terms of the phased implementation of the carbon tax, Phase One runs from the 1st of June 2019 to 31 December 2022 with the subsequent Phase Two running from 2023 to 2030.[127] Outcomes from the implementation Phase One will guide the content of Phase Two. This means that towards the end of Phase One, an in-depth assessment of the tax will be carried out to determine if the design of the carbon tax should be adjusted accordingly.[128]

3.2.1. Implementation phases

The initial period for Phase One of the Carbon Tax Act implementation was from 1 June 2019 to 31 December 2022. However, this period of implementation has since been extended by a further three years to 31 December 2025.[129] For the cohesion of the study, the extension of the carbon tax implementation will be limited to this passage.

Accordingly, under Phase One provisions are made for allowances, rebates as well as exemptions. The rate of tax under this phase is set at R120 per ton of CO_2-eq GHG emitted by a taxpayer.[130] The tax rate is projected to increase annually as stipulated in Section 5(2) by two per cent plus the consumer price inflation (CPI).[131] Perhaps, the tax-free allowances provided are a testament to the transitional phase that is Phase One. A summative description of tax-free allowances provided is as follows: There is a basic allowance of 60 per cent, additionally process emissions have an allowance of 10 per cent which is similar to the other provided for fugitive emissions, adjustable allowance of up to 10 per cent for trade-exposed sectors, further allowance of 5 per cent for above average performance taxpayers, additionally companies with a Carbon Budget are provided with a 5 per cent tax-free allowance.[132] Moreover, during Phase One tax-free allowances provided to taxpayers can cumulate to a maximum reduction of 95 per cent of the total GHG emitted.[133] This means that the tax rate in this phase is as low as R6 to R48 per ton of CO_2-eq GHG emissions.[134] Phase Two of

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127 South African Revenue Services (SARS) Carbon tax implementation in South Africa 2020 https://www.sars.gov.za/wp-content/uploads/Docs/CarbonTax/Carbon-Tax-Roadshow-August-2020.pdf 9 (accessed 12 July 2022).

128 As above.

129 Minister of Finance E Godongwana 2022/2023 Budget Speech February 2022 http://www.treasury.gov.za/documents/national%20budget/2022/speech/speech.pdf 15 (accessed 12 July 2022).

130 Carbon Tax Act 15 of 2019 sec 5(1).

131 Carbon Tax Act 15 of 2019 sec 5(2).

132 Carbon Tax Act 15 of 2019 Secs 7,8,9,10,11 and 12.

133 Carbon Tax Act 15 of 2019 Sec 14; National Treasury Explanatory Memorandum on the Carbon Tax Bill 2018 (n 20 above) 5.

134 As above.

implementing the Act is reliant on the outcomes and success of the first phase. Much improbability remains regarding this phase, however, the annual increase of two per cent as provided for in the Act will be done away with.

The phased implementation approach has been met with scepticism and praise from various stakeholders and taxpayers alike. Similarly, shortcomings of this approach and recompenses have been raised.

3.2.2. Advantages and disadvantages of the implementation approach

The phased approach allows taxpayers to prepare for the proposed increase in taxes to be paid on CO_2-eq GHG emitted.[135] Further, this approach protects the competitiveness of the country, that is, it ensures that there is a smooth transition that will not be detrimental to the competitive edge of the country and companies.[136]

With regard to the shortcomings of the phased implementation approach, it has been heavily criticised for its low tax rate as well as allowances. CER argues that the tax rate of R120 per CO_2-eq GHG emissions is too low and subsequently, the ultimate goal of reducing emissions might not be met as a result of the low tax rate.[137] Moreover, the tax-free allowances provided in the transitional Phase One accumulating to up to 95 per cent might delay the commitment made by South Africa to drop GHG emissions by 42 per cent in 2025.[138] Another shortcoming of the phased implementation approach is that the success of Phase One determines the contents of Phase Two. This presents much uncertainty around the implementation of Phase Two of the Carbon Tax Act.

3.3. Provisions of the Act

As previously stated in 1.1, the Carbon Tax Act 15 of 2019 — as a Pigouvian tax — aims to impose a tax on the CO_2-eq GHG emitted. The Preamble of the Act acknowledges the importance of the polluter pays principle in the wake of the climate change crisis.[139] This means that polluters bear the responsibility of ensuring that South Africa contributes to the global effort to reduce GHG emissions

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135 National Treasury and SARS Standing Committee on Finance (SCOF): Report-Back Hearings February 2019 http://www.treasury.gov.za/public%20comments/CarbonTaxBill2019/Final%20Response%20Document%20-%202018%20Draft%20Carbon%20Tax%20Bill.pdf 7 (accessed 17 August 2022).

136 National Treasury Explanatory Memorandum on the Carbon Tax Bill 2018 (n 20 above) 4.

137 Centre for Environmental Rights (n 102 above) 2.

138 National Treasury Discussion Paper for public comment. Reducing Greenhouse Gas Emissions: The Carbon Tax option (n 27 above) 3; Carbon Tax Act 15 of 2019 Secs 7,8,9,10,11 and 12.

139 Carbon Tax Act 15 of 2019 The Preamble.

in the atmosphere.[140] This section outlines the fundamental provisions of the Act in three parts. Fundamental provisions included will be up to Part IV.

3.3.1. Imposing carbon tax

Section 3 of the Carbon Tax Act states that a taxpayer conducting any activity(s) that emits GHGs is liable to pay a carbon tax amount as stipulated for that tax period.[141] A person in terms of the Act is inclusive of any partnership, trust, municipal entity as well as any public entity. Mining companies involved in mining activities in South Africa are therefore persons in terms of the Act and are liable to pay a carbon tax amount for a specific tax year.

Approaches that can be utilised in imposing a carbon tax include an upstream approach, downstream and a combined approach may be employed. When an upstream approach is applied to impose a carbon tax it taxes emissions upon entering the economy.[142] This happens when fossil fuels are produced. It is posited that as a result, a carbon tax is imposed before GHG emissions have concentrated in the atmosphere, thus it is attributed to the fossil fuels produced by a taxpayer.[143] Avi-Yonah and Uhlman argue that an advantage of this approach is that it covers a variety of CO_2 emissions.[144] The downstream carbon tax approach imposes an amount on amenities that primarily contribute to CO_2 emissions.[145] In this case, facilities pay a carbon tax amount on emissions that they release. The downstream approach imposes a tax on the emissions. The combined approach is not relevant for South Africa, as such the study will limit the discussions on approaches to the two discussed above. Additionally, Section 4(1) of the Carbon Tax Act states that the carbon tax amount is imposed on the total GHG emissions of a certain emitter in respect of a specific tax period. [146] This sum is articulated as the CO_2-eq GHG emissions. Consequently, it is argued that the South African carbon tax adopts the upstream approach.[147]

Section 5 of the Act deals with the rate of tax and it provides that the carbon tax amount as imposed on GHG emissions is R120 per ton of CO_2-eq GHG emissions and further that this rate shall

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140 AM Greaver (n 55 above) 20- 21.

141 Carbon Tax Act 15 of 2019 Sec 3.

142 JL Ramseur & L Parker 'Carbon Tax and Greenhouse Gas Control' in N Viveiros (ed) Carbon Taxes: Elements, considerations and objectives (2013) 69.

143 As above.

144 RS Avi-Yonah & DM Uhlmann (n 65 above) 31.

145 R Hughes (n 100 above) 15.

146 Carbon Tax Act 15 of 2019 Sec 4(1).

147 National Treasury Carbon Tax Policy Paper (n 96 above) 10.

be increased annually by two per cent plus the amount of CPI during a specific tax period.[148] Section (6) clarifies how this amount is to be calculated.

3.3.2. Allowances and limitations

Part II of the Act provides allocates various allowances for taxpayers, including an allowance that is allocated for fossil fuel incineration, one provided for fugitive emissions, trade exposure, performance, carbon budget and lastly offset. In terms of Section 7(1) of the Act, a taxpayer will be entitled to an allowance for fossil fuel combustion if they are actively involved in any activity listed in schedule 2 of the Act including mining.[149] Taxpayers in this category will qualify for a 60 per cent tax-free allowance for their emissions. Another 10 per cent allowance is provided to a taxpayer engrossed in any activity that results in industrial process emissions.[150] Any emissions attributed to fugitives may entitle the taxpayer to a tax-free allowance in so far as the activity undertaken is listed in Schedule 2 of the Act.[151] In summary, Section 10 allocates a 10 per cent tax-free allowance to a taxpayer for trade activities,[152] and Section 11 of the Act provides for a performance allowance to taxpayers that are actively engaged in reducing GHG emissions.[153] The performance allowance allocated does not exceed 5 per cent. An additional 5 per cent allowance can be provided to a taxpayer that is a participant in the carbon budget system in terms of Section 12(1) of the Act. The minister may prescribe carbon offsets to be utilised by taxpayers.[154] These allowances can be limited in so far as they exceed 95 per cent as postulated in Section 14 which holds that should a taxpayer be entitled to tax-free allowances exceeding 95 per cent they can be limited.[155] This means that the taxpayer will only be entitled to 95 per cent of the maximum total.

3.3.3. Administering the Act: Administration, tax period and payment

As the carbon tax is a Pigouvian tax it is administered in terms of the Customs and Excise Act.[156] The carbon tax is payable every tax period which as of the end of 2019, is from 1 January to 31 December

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148 Carbon Tax Act 15 of 2019 Sec 5(1), 5(2).

149 Carbon Tax Act 15 of 2019 Sec 7(1).

150 Carbon Tax Act 15 of 2019 Sec 8(1).

151 Carbon Tax Act 15 of 2019 Sec 9(1).

152 Carbon Tax Act 15 of 2019 Sec 10.

153 Carbon Tax Act 15 of 2019 Sec 11 (1).

154 Carbon Tax Act 15 of 2019 Sec 12 (1), Sec 13(1).

155 Carbon Tax Act 15 of 2019 Sec 14.

156 Carbon Tax Act 15 of 2019 Sec 15(1).

of each year.[157] Section 17 calls for taxpayers to submit accounts for their environmental levies as well as any payments made.[158]

3.4. Critical analysis of the Carbon Tax Act

A carbon tax should adhere to the principles of a good taxation regime.[159] Carbon taxation, if developed in line with the principles of good taxation, should ensure that revenue is generated while achieving environmental objectives and also that there is some sort of integrity within the tax regime. [160]In terms of the principles of good taxation, environmentally related taxation should not influence policymaking. This means that the tax must be neutral.[161] Secondly, equity must be always upheld and lastly, the taxation must be certain, and simple and it should keep costs at a minimum.[162] These standards if reflected and considered in an environmentally related tax such as the carbon tax, denote the fact that the tax has been developed in line with the principles of good taxation.

In analysing the Carbon Tax, the following sections adopt the suggested criteria used to assess any environmentally-related tax system acknowledged by the National Treasury.[163] The Carbon Tax Act as an environmentally-related taxation falls under this category. As such the established criteria can be used to review whether it is suited for South Africa. The set criteria includes Environmental Effectiveness, Tax Revenue, Support for the tax, Legislative Aspects, Technical and Administrative viability, Competitiveness, Distributional effects, and Aligning policy spheres.[164]

3.4.1. Environmental effectiveness

The ultimate objective of the Carbon Tax is to encourage a change in the behaviour of taxpayers and reduce GHG emissions. Thus, a nexus has to exist between the environmental crisis and the tax instrument itself.[165] The aim of the Act establishes this causal connection. When there is an established

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157 Carbon Tax Act 15 of 2019 Sec 16.

158 Carbon Tax Act 15 of 2019 Sec 17.

159 National Treasury A framework for considering market-based instruments to support environmental fiscal reform in South Africa: Draft Policy Paper 2006 (n 103 above) 56.

160 As above.

161 National Treasury A framework for considering market-based instruments to support environmental fiscal reform in South Africa: Draft Policy Paper 2006 (n 103 above) 57.

162 As above.

163 Her Majesty's Customs and Excise (HCME) Appraising Environmental Taxes: A tool for assessing new proposals Environmental Taxation Department (2002), UK.

164 National Treasury A framework for considering market-based instruments to support environmental fiscal reform in South Africa: Draft Policy Paper 2006 (n 103 above) 58.

165 National Treasury A framework for considering market-based instruments to support environmental fiscal reform in South Africa: Draft Policy Paper 2006 (n 103 above) 59.

nexus, the instrument is created with inducements that will not harm taxpayers.[166] The tax instrument will achieve maximum efficiency if the best design principle is adopted. It does this by lessening exemptions when designing the instrument.[167] The Act does grant any exemptions however it provides allowances which are only up to 95 per cent of the total GHG emitted. Thus, allowances provided by the Act as concessions allows taxpayers to incur low tax rates.[168]

3.4.2. Tax Revenue

The tax revenue benchmark acknowledges the importance of instruments such as the carbon tax to generate revenue.[169] Hughes holds that the revenue generated from a carbon tax is based on the tax rate.[170] The potential of a carbon tax generating revenue can be attributed to the inductile price of the tax imposed on CO_2 emissions.[171] Hence the inelasticity of the tax price is argued to be a good tax practice. A carbon tax is incapable of generating revenues if for instance generous incentives are provided to taxpayers. This practice can lead to a decline in the number of revenues generated.[172] Greaver calls for a compromise to be made between providing generous incentives to encourage a change in the behaviours of taxpayers and setting the price of the tax at an inductile price.[173] The gradual implementation of the South African carbon tax instrument provides generous incentives in the form of allowances to taxpayers to encourage a behaviour change and the tax rate is not inductile.

The allocation of these revenues is an important variable. Their use and where they are allocated can ultimately determine whether taxpayers accept the tax instrument or not.[174] Through the process of earmarking these revenues can be allocated to an activity. These earmarked programmes form part of South Africa's budget.[175]

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166 As above.

167 National Treasury A framework for considering market-based instruments to support environmental fiscal reform in South Africa: Draft Policy Paper 2006 (n 103 above) 59.

168 Carbon Tax Act 15 of 2019 Secs 7, 8, 9, 10, 11, 12 and 13.

169 National Treasury A framework for considering market-based instruments to support environmental fiscal reform in South Africa: Draft Policy Paper 2006 (n 103 above) 59.

170 R Hughes (n 100 above) 17.

171 National Treasury A framework for considering market-based instruments to support environmental fiscal reform in South Africa: Draft Policy Paper 2006 (n 103 above) 59.

172 As above.

173 AM Greaver (n 55 above) 23.

174 National Treasury A framework for considering market-based instruments to support environmental fiscal reform in South Africa: Draft Policy Paper 2006 (n 103 above) 60.

175 National Treasury A framework for considering market-based instruments to support environmental fiscal reform in South Africa: Draft Policy Paper 2006 (n 103 above) 101.

3.4.3. Support for the tax

As established above in 3.4, any tax instrument has the potential of generating revenue for the government to provide public services. It is, therefore, vital for tax instruments to garner support from the public and acceptance.[176] Such acceptance and public support result in compliance by taxpayers.[177] The response document from the National Treasury and SARS outlines comments received from various stakeholders. This is important because it provides legislators with an opportunity to address these comments. Moreover, the Carbon Tax Act has been met with resistance from the Minerals Council South Africa arguing that the Act presents further hurdles to mining companies' potential to invest in alternative forms of energy such as renewable energy.[178]

3.4.4. Legislative Aspects

An environmental tax such as the carbon tax must be designed in consideration of existing legislation. The Minister of Finance must consider fundamental aspects of the tax such as a tax base, how the tax revenues are used, administration of the tax, monitoring and lastly, how the tax is imposed.[179] The South African carbon tax for instance relies on other existing instruments. Directly on the Income Tax Act 58 of 1962 and indirectly on the Customs and Excise Act 91 of 1694.[180] These interventions ensure that the carbon tax is designed to be compatible with these existing tax instruments. Moreover, the carbon tax has to be in harmony with other government commitments. In this case, it is required that the carbon tax be compatible with the commitments made within World Trade Organisation (WTO) agreements and other commitments made through the South African Development Community (SADC).[181]

3.4.5. Technical and Administrative viability

The technical and administrative viability of an environmental tax is attributed firstly to a definite taxable commodity. This means that there must be a connection between the ultimate environmental

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176 National Treasury A framework for considering market-based instruments to support environmental fiscal reform in South Africa: Draft Policy Paper 2006 (n 103 above) 60.

177 As above.

178 S Liedtke 'Minerals council calls for delay in Carbon Tax implementation' 19 September https://www.engineeringnews.co.za/article/minerals-council-calls-for-delay-in-carbon-tax-implementation-2019-09-19/rep_id:4136 (accessed 12 July 2022).

179 National Treasury A framework for considering market-based instruments to support environmental fiscal reform in South Africa: Draft Policy Paper 2006 (n 103 above) 60-61.

180 National Treasury A framework for considering market-based instruments to support environmental fiscal reform in South Africa: Draft Policy Paper 2006 (n 103 above) 60.

181 National Treasury A framework for considering market-based instruments to support environmental fiscal reform in South Africa: Draft Policy Paper 2006 (n 103 above) 61.

objective of the tax and the tax base. The objective of the carbon tax in this instance is to reduce the GHG emissions in the atmosphere and encourage polluters to consider alternative forms of energy supply. Care should be given to the quantity of tax needed to achieve the environmental objective of an environmental tax.[182] The phased implementation approach should be preferred because it allows taxpayers to adjust.[183] Tax avoidance and evasion are problems associated with tax instruments. Tax avoidance and evasion are escapable if properly addressed during the designing of the tax.[184]

Imposing a tax at the source is a desirable measure to be used to avoid the chances of taxpayers avoiding and evading taxes.[185] This ensures that costs are collected with little to no interruptions. It is also important to consider costs sustained when collecting tax revenues. SARS bears the responsibility of assembling tax revenue and subsequently, can utilise existing systems to administer the collection of tax revenue. The general rule is that costs for compliance of firms should be kept at a minimum. [186]

3.4.6. Competitiveness

Evaluating the competitiveness bearings of an environmental tax such as the carbon tax is important. As carbon tax intends to alter the behaviours of taxpayers, it may carry with it unintended effects impacting the economy. As such, a strategic response aimed at reducing the competitiveness impacts acknowledges how these effects will harm the bearer.[187] Because the carbon tax is imposed on the CO_2-eq GHG emissions and mining companies are some of the largest emitters and usually trade mined products internationally, it is thus, important to consider their competitiveness as a result. Where it has been established that their competitiveness is affected in an international arena, they would require some protection[188] Further, where it is impossible to implement and invest in cleaner technologies, then companies are less likely to avoid their tax liabilities.[189]

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182 As above.

183 AM Greaver (n 55 above) 27.

184 R Hughes (n 100 above) 22.

185 National Treasury A framework for considering market-based instruments to support environmental fiscal reform in South Africa: Draft Policy Paper 2006 (n 103 above) 62.

186 As above.

187 R Hughes (n 100 above) 23; National Treasury A framework for considering market-based instruments to support environmental fiscal reform in South Africa: Draft Policy Paper 2006 (n 103 above) 62

188 H Winkler & A Marquard 'Analysis of the economic implications of a carbon tax' (2011) 22 Journal of Energy in Southern Africa 64.

189 National Treasury A framework for considering market-based instruments to support environmental fiscal reform in South Africa: Draft Policy Paper 2006 (n 103 above) 62.

Domestic businesses can increase the prices of their products to counter their tax responsibilities. This is dependent on the flexibility of the price of the goods in demand as well as any competition.[190] The impacts on these companies may vary and as such impacts of the tax on other key variables has to be taken into account.[191] Businesses in an international competition arena, in turn, may not have the advantage of passing the tax to their consumers. There are mitigation strategies to be considered when addressing the impacts of a tax on domestic industries and these include reducing tax rates or even granting exemptions, tax refunds, recycling revenues, phased implementation of the tax, tax adjustments and harmonising the tax.

3.4.7. Distributional effects

This relates to the impacts that the carbon tax might have on groups with different incomes. The tax design and tax base determine the extent to which this tax can be regressive.[192] That is the disproportionally taxing of those in lower income groups. As a result, it is fitting for any environmental tax to embrace vertical equity which advocates for the idea that economic circumstances should determine one's tax burden and horizontal equity concerns which in turn, calls for equal treatment of people in similar economic classes.[193] Recourse and compensation should be offered to those disproportionately affected by the tax and as a result, fall victim to the distribution effects of the tax.[194] The main purpose of these actions is to minimise the tax responsibilities that these affected groups may have. Further, tax refunds can also be considered to compensate the groups affected.[195]

3.4.8. Aligning policy spheres

Aligning policy spheres deals with the extent to which the carbon tax is in alignment with policy goals. It is of paramount importance that the carbon tax is aligned with existing regulations and any agreements aimed at achieving certain environmental goals.[196] Environmental taxes should also

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190 AM Greaver (n 55 above) 29.

191 National Treasury A framework for considering market-based instruments to support environmental fiscal reform in South Africa: Draft Policy Paper 2006 (n 103 above) 63.

192 As above.

193 National Treasury A framework for considering market-based instruments to support environmental fiscal reform in South Africa: Draft Policy Paper 2006 (n 103 above) 27.

194 National Treasury A framework for considering market-based instruments to support environmental fiscal reform in South Africa: Draft Policy Paper 2006 (n 103 above) 63 - 64.

195 National Treasury A framework for considering market-based instruments to support environmental fiscal reform in South Africa: Draft Policy Paper 2006 (n 103 above) 64.

196 National Treasury A framework for considering market-based instruments to support environmental fiscal reform in South Africa: Draft Policy Paper 2006 (n 103 above) 64.

address developmental challenges such as job creation, curbing poverty, and basic services such as electricity, water, and sanitation.

3.5. Conclusion

In this chapter, the main objective was to analyse the phased implementation approach followed in South Africa as well as detail its advantages and disadvantages. Carbon Tax as environmentally related taxation should adhere to the principles of a good taxation regime. The suggested criteria used to assess any environmentally-related tax system acknowledged by the National Treasury include Environmental Effectiveness, Tax Revenue, Support for the tax, Legislative Aspects, Technical and Administrative viability, Competitiveness, Distributional effects, and Aligning policy spheres. The Carbon Tax Act intends to reduce GHG emissions. South African Carbon Tax Act observes the majority of the items in the set criteria used to assess environmentally-related tax instruments. As a result, this study posits that the carbon tax instrument adopted in South Africa is suitable and apt for the country. Over and above the reduction of GHG emissions, it implores mining companies to embrace a low-carbon economy. This includes incorporating alternatives such as green technologies and the utilisation of renewable sources.

In terms of the phased implementation of the carbon tax, Phase One runs from the 1st of June 2019 to 31 December 2022 with the subsequent phase, Phase Two running from 2023 to 2030. Under Phase One provisions are made for allowances, rebates as well as exemptions. The rate of tax under this phase is set at R120 per ton CO_2 equivalent of GHG emissions. The main advantage of the phased approach is that it facilitates a just transition to a low-carbon economy in South Africa by granting taxpayers an opportunity to prepare for the proposed increase in taxes to be paid on CO_2-eq GHG emitted. The main disadvantage of this approach is that it has a low tax rate as well as provides allowances that can be up to 95 per cent of the total emissions. The tax-free allowances provided in the transitional Phase One accumulating to up to 95 per cent might delay the commitment made by South Africa to drop GHG emissions by 42 per cent in 2025.

The following chapter will address the practical implications of this act on mining companies. The concept of a low-carbon economy will be explored, and the importance of mining companies committing to the (E) in ESG. The chapter will outline the renewable energy uses and projects that mining companies can invest in and implement to reduce their emissions, thus avoiding a carbon tax and contributing to the transition to a low-carbon economy.

CHAPTER 4:

PRACTICAL IMPLICATIONS OF THE CARBON TAX ACT ON THE SOUTH AFRICAN MINING SECTOR

4.1. Introduction

The carbon tax is a Pigouvian tax that seeks to reduce harmful environmental externalities by changing the behaviours of businesses and taxpayers in general. The Act pushes businesses to use green technology and think about alternate energy sources. The objective of this chapter is to determine the likelihood of the Act facilitating a just transition to a low-carbon economy and ascertain what this means for mining companies. In light of the above, Section 4.2 of the chapter will provide a brief overview on law-carbon economy. This will be followed in Section 4.3 by a discussion on the commitment to the 'E' in ESG and what this means for mining companies. Subsequently, Section 4.4 will contain a discussion on renewable energy sources that mining companies can invest and implement in as their contribution to the transition to a low-carbon economy. Lastly, Section 4.5 positions the double dividend hypothesis is a variable that can generate revenue and reduce emissions which will ultimately lead to a low-carbon economy.

4.2. Low-carbon economy

As a carbon-intensive and subsequently amongst the largest countries to GHG emissions and climate change crisis in Africa, the move to adopt the Carbon Tax in South Africa as a mitigation measure signified its positionality in the global fight against climate change and a need to transition to a low-carbon economy as it were globally. Winkler and Marquard conceptualise interventions that may be implemented to facilitate a transition to a low-carbon economy.[197] They postulate that there is a need to regulate any government incentive. This is done in an attempt to dispel any investments further into projects that are carbon-intensive as they have to potential to inhibit future mitigation options. The second suggestion put forth is that perhaps the focus of mitigation determinations detailed in the national climate change response paper could shift towards industries that are not carbon-intensive.[198] In this instance, non-energy industries are enclosed from any future impact of low-energy costs.

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197 H Winkler & A Marquard (n 174 above) 61.

198 As above.

The authors point out that the third strategy would include a move towards an area that does not require high carbon and is competitive such as the utilisation of solar thermal energy.[199] The fourth strategy would be a just transition for energy-intensive sectors. A smooth transition ensures that there are no effects on employment as well as investments.[200] This is a four-pronged strategy including selective beneficiation, investing in programmes that are energy efficient, deliberating on the future of energy-intensive sectors and lastly, a possible shift by companies that extract resources to materials provision.[201] The final strategy includes the imposing of tax on energy use. A carbon tax as adopted in South Africa is an example of this strategy.

Arguably, these strategies are effective insofar as they are implemented together and would ensure that the transition to a low-carbon economy is smooth, and it does not have negative impacts. The adoption of the Carbon Tax Act signifies an intention to reduce emissions and transition to a low-carbon economy. However, for the transition to a low-carbon economy, this study holds that the five strategies discussed earlier should be integrated and developed as a suite of mitigation policies.

4.3. Commitment to the (E) in ESG

The fundamental implication of the Carbon Tax Act is to impose a tax on CO_2-eq GHG emissions periodically and facilitate a structural transition to a low-carbon economy.[202] As such, it implores mining companies to reduce their emissions by implementing tangible changes to avoid a carbon tax. Environmental Social and Governance (ESG) is put forth in this study as a practical inference of the Act on mining companies. ESG represents policies that speak to the views and ambitions of corporations in addressing and responding to environmental, social and governance concerns and factors.[203] Integrating these policies into corporate operations may allow mining companies to reduce their emissions and in turn, participate in the transition to a low-carbon economy. Such practices are used to evaluate mining companies as well as their operations.[204]

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199 H Winkler & A Marquard (n 174 above) 61.

200 H Winkler & A Marquard ' Energy development and climate change: Decarbonising growth in South Africa' 2007 https://open.uct.ac.za/bitstream/handle/11427/16809/Winkler_Energy_2007.pdf?sequence=1&isAllowed=y 21 (accessed 10 August 2022).

201 As above.

202 World Bank Group Integration of the Carbon Tax and Carbon Budgets in South Africa 2017 65.

203 R Isto 'A study of the integration of Environment, Social and Governance Policy in the mining industry' unpublished Masters thesis, Montana Tech, 2022 2.

204 Ausenco 'Environmental, Social and Governance (ESCG) performance expectations in mining' 30 June https://ausenco.com/assets/images/Environmental-Social-and-Governance-ESG-Performance-Expectations-in-Mining.pdf 2 (accessed 2 September 2022).

A commitment to the environmental component of the ESG has the potential of reducing GHG emissions by mining companies. Jinga argues that companies that invest in ESG can as a result reduce their carbon footprints.[205] Commitment to the E for companies refers to integral stratagems implemented to address climate performance, accounting for GHG emissions and implementing programmes that result in the reduction of these emissions thereof, utilisation of available incentives. Moreover, this commitment could mean reporting results as it were of their internal sequencers aimed at reducing GHG emissions.[206] This obligation responds to Goal 13 of the SDGs. Goal 13 advocates for the need to combat climate change and its impacts by states and corporations.[207] Compliance with the provisions of the Carbon Tax Act may also signify a company's commitment to the environmental component of the ESG.

4.4. Renewable energy sources for the sector

South African mining sector is an energy-intensive one and heavily relies on energy sources such as coil, oil and gas. As such, because the Act imposes a tax on CO_2-eq GHG emissions, mining companies can implement and invest in alternative forms of energy sources to avoid tax liability and ultimately reduce their GHG emissions. Accordingly, Anglo-American holds that the common sources of energy utilised in the mining sector include Biodiesel, Geothermal energy, Hydropower, Solar and Wind.[208] This adheres to goal 7 of the SDGs: Affordable and clean energy.[209] Goal 7 provides for the use of renewable energy sources and the promotion thereof of investment in these sources of energy. The 2019 Integrated Resources Plan (IRP) reiterates this fact by stating that investment in renewable energy projects may lead to the reduction of emissions.[210] Implementing these provides mining companies with an opportunity to reduce their GHG emissions and escape their carbon tax liability.

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205 P Jinga 'The increasing importance of Environmental, Social and Governance (ESG) investing in combatting climate change' in JP Tiefenbacher(ed) *Environmental Management: Pollution, Habitat, Ecology and Sustainability* 2022 284.

206 Ausenco 'Environmental, Social and Governance (ESCG) performance expectations in mining' (n 190 above) 4.

207 United Nations 'The 2030 Agenda for Sustainable Development: The 17 Goals' (n 3 above).

208 Anglo American '4 ways the mining industry uses renewable energy' 24 September https://www.angloamerican.com/futuresmart/stories/our-world/environment/mining-with-renewable-energy (accessed 20 September 2022)

209 United Nations 'The 2030 Agenda for Sustainable Development: The 17 Goals' (n 3 above).

210 Department of Mineral Resources Integrated Resource Plan 2019 8.

4.4.1. Biodiesel

Biodiesel can be used as an alternative source of energy by mining companies and as articulated by Bell Performance it is the percentage of vegetable oil that is treated to that of diesel.[211] The oil in this case is chemically amalgamated with the diesel. It has the potential of countering the increasing price of oil and reduce GHG emissions in the atmosphere. The process of producing biodiesel requires a less significant amount of fossil fuels which means that it can significantly reduce emissions. In a lifecycle, biodiesel may reduce CO_2-eq GHG emissions by at least 70 per cent in comparison to diesel.[212]

4.4.2. Geothermal energy

The production of geothermal energy includes the process of identifying, extracting and processing hot fluids that may be used to generate electricity.[213] These hot fluids as an alternative source of energy replace fossil fuels and include Silica and Lithium. As such, this alternative source of energy is a viable option for mines in areas with these fluids available. Geothermal energy production has the potential to subsequently reduce GHG emissions thus, contributing to the global effort to transition to a low-carbon economy.

4.4.3. Hydropower

Hydropower as the name suggests involves the powering of mining equipment with high-pressure water. Herein gravitational force underwater is used to generate electricity.[214] When utilised, hydropower can save a significant amount of energy and has been hailed as a sustainable source of renewable energy in South Africa. The development and implementation of any hydropower plant will be established in terms of the National Water Act 36 of 1998.[215]

4.4.4. Hydrogen

This is an alternative energy that is normally locked in water and can be used to provide power to buildings as well as automobiles. In its production, fossil-based and renewable feedstocks may be

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211 Bell Performance Inc Biodiesel: Advantages and Potential problems https://cdn2.hubspot.net/hub/68152/file-458350385-pdf/Bell_Performs/Biofuels_-_Advantages_and_Potential_Problems.pdf?t=1482521076116 1 (accessed 15 August 2022)

212 Greeneconomy.media 'Biodiesel: New fuel for new businesses in SA' https://greeneconomy.media/biodiesel-a-fuel-alternative-that-can-lead-to-new-business-opportunities/ (accessed 20 September).

213 L Patsa et al 'Geothermal Energy in Mining Developments: Synergies and Opportunities throughout a mine's operational life cycle' (2015) World Geothermal Congress 2015 conference 4.

214 Department of Minerals and Energy Resources White Paper on renewable energy 2003 2.

215 Department of Water & Sanitation Draft Sustainable Hydropower Generation Policy 2015 3.

used.[216] However, it appears that renewable feedstocks may result in more advantages than fossil-based ones. In a mining context, hydrogen can be utilised to power underground machinery, therefore, reducing the need for fossil fuels for power. The application of hydrogen has been proven to result in GHG emissions.[217]

4.4.5. Solar

Solar converts sunlight into energy by utilising photovoltaic (PV) panels or solar radiation in mirrors. Solar is deemed to be the best source of renewable energy in Africa, thus mining companies in South Africa can utilise it to offset their emissions. As an economical renewable energy technology, solar has the potential to reduce emissions of mining companies.[218] Mining companies have been working towards implementing solar energy technologies in their operations. Moreover, because most mines are in remote areas, solar may provide much-needed access to energy.[219]

4.4.6. Wind

Wind energy involves the utilisation of energy from the wind. This energy can be used to generate energy as well as in windmills.[220] This source of energy is argued to be one of the best sources of energy. This is because it is available throughout the world. Wind energy has the potential to be converted to hydrogen.[221] The advantages of this source of energy include the low cost, security as well as being a clean source of energy.[222]

4.5. Double dividend hypothesis

The Carbon Tax Act imposes a tax on CO_2-eq GHG emissions periodically using the polluters pay principle and it provides them with incentives that would assist in facilitating an organisational transition to a low-carbon economy.[223] As a Pigouvian tax, it attempts to correct market failures, thus

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216 AI Osman et al 'Hydrogen production, storage, utilization and environmental impacts: a review' (2021) 20 *Environmental Chemistry Letters* 182.

217 AI Osman et al 'Hydrogen production, storage, utilization and environmental impacts: a review' (n 175 above) 156.

218 T Igogo et al 'Integrating renewable energy into mining operations: Opportunities, challenges and enabling approaches' (2021) *Applied Energy* 300 5.

219 Department of Mineral Resources and Energy Integrated Resource Plan 2019 20.

220 Department of Minerals and Energy Resources White Paper on renewable energy 2003 1.

221 D Banks et al 'The potential contribution of renewable energy in South Africa' (2005) *Energize* 39; DN Chorafas Energy, Environment, Natural Resources and Business Competitiveness: The fragility of interdependence (2011) 104.

222 PF Ledwaba 'The use of renewable energy in small scale mining' unpublished research report, University of the Witwatersrand, 2014 39.

223 World Bank Group (n 202 above)

incentivising companies to implement changes and also aims to generate revenue.[224] Conversely, polluters that fail to use incentives provides to offset their GHG emissions will be required to pay the tax.

The double dividend hypothesis maintains that taxing activities that are polluting should yield two distinct advantages.[225] The environment as a result of the taxes should improve and secondly, the tax can generate revenues that can contribute to the national economy of the country.[226] This means that for the double-dividend hypothesis to be said to have been achieved in the context of the carbon tax, a noticeable reduction in GHG emissions must first occur and there must be economic efficiency. This study proposes the double-dividend hypothesis as a practical implication of the Act. This is because, in addition to the imposition of taxes on CO_2-eq GHG emissions for those emitting, it ensures that there are incentives provided to ensure that they implement changes that may reduce emissions and escape tax liability. The consequence for emitters that do not utilise these changes is that they will still be liable for taxes on their CO_2-eq GHG emissions, thus generating revenues for the state. In turn, these revenues could be projected towards projects with the potential to reduce overall GHG emissions. Greaver argues that some of these projects include providing access to clean energy to everyone and investing in industries that have a low carbon footprint which would, in turn, create more jobs within green industries.[227] To review, the double dividend as a practical implication of the Act insinuates that the Act intends to achieve the environmental goal of reducing GHG emissions and creating revenue to achieve the environmental benefit of the tax. These goals cannot exist in isolation.

4.6. Conclusions

The objective of this chapter was to ascertain the possibility of the Act facilitating a just transition to a low-carbon economy and ascertain what this means for mining companies. Therefore, the implication of the Act is evaluated to determine whether the Carbon Tax Act can facilitate a smooth

The adoption of the Carbon Tax Act signifies an intention to reduce emissions and transition to a low-carbon economy. As the fundamental implication of the tax is to impose a tax on CO_2-eq GHG emissions for those emitting and also provide incentives to ensure that a smooth transition to a low-carbon economy is possible. Subsequently, it implores mining companies to reduce their emissions by

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224 R Schöb 'The double-dividend hypothesis of environmental taxes: A survey' (2003) *CESifo Working Paper* 946 3

225 D Fullerton & GE Metcalf (n 64 above) 1.

226 As above.

227 AM Greaver (n 55 above) 60.

implementing tangible changes to avoid tax liability. This would mean that these companies are able to contribute to the global effort to structurally transition to a low-carbon economy. Commitment to the 'E' in ESG may result in a reduction of GHG emissions by mining companies. This refers to integral stratagems implemented to address climate performance, accounting for GHG emissions and implementing programmes that result in the reduction of these emissions thereof, utilisation of available incentives.

Biodiesel, Geothermal energy, Hydrogen, Hydropower, Solar and Wind are alternative sources of energy that can be utilised in the mining sector. Investment in renewable energy projects by mining companies might reduce their emissions. The double dividend hypothesis taxes activities that result in pollution and yield two advantages: an environmental benefit and a financial one. It would be capable of ensuring that the transition to a low-carbon economy is possible if its advantages are achieved. The double-dividend hypothesis is argued to be a practical implication of the Act. This is because, in addition to the imposition of taxes on CO_2-eq GHG emissions for those emitting, it ensures that there are incentives provided to ensure that they implement changes that may reduce emissions and escape tax liability. The consequence for emitters that do not utilise these incentives is that they will still be liable for taxes on their CO_2-eq GHG emissions, thus generating revenues for the state. Noteworthy, the two benefits cannot exist in quarantine from one another. Everything considered, the Carbon Tax Act seemingly has no potential to facilitate a smooth transition to a low-carbon economy on its own. A smooth structural transition to a low-carbon economy means that more than one mitigation policy should be developed and these policies must be integrated.

CHAPTER 5:

SUMMARY AND CONCLUSION

5.1. Introduction

The aim of this study was to uncover the practical implications of the Carbon Tax Act on mining companies and the primary question associated with this aim is: what are the practical implications of the Carbon Tax Act on mining companies in South Africa and the sector in general?

5.2. Summary of the findings

The climate change crisis and its effects have been receiving much-needed attention recently from different country leaders and multinational corporations. Strategies addressing the calamity of climate change, its effects and measures to reduce GHG emissions lead conversations around climate change. Climate change in terms of the IPCC refers to a change in climate for an extended period that is confirmed by improper changes in the climate. This deviates slightly from the UNFCCC's definition in that it does not attribute these changes to human involvement.

The South African mining sector is an energy-intensive sector and it consumes a lot more energy. This industry plays a significant role in the expansion of the economy. In 2018 this industry consumed 10 per cent of the 51 per cent of the overall energy consumed by the industrial sector. Conversely, the mining sector's contribution to the national economy is noticeable in employment rates, export earnings and the GDP.

The National Climate Change Response Paper outlines South Africa's strategy to address and combat climate change. Herein a commitment to join the global effort to limit GHG emissions as well as an ability to address developmental issues are two values upon which the strategy is based on. Market-based instruments, Emissions trading schemes and Carbon taxation may be effective in responding to the climate change crisis. These instruments adopt the polluters pay principle. ETS places a cap on the number of emissions and allocates a permit for trading whereas, carbon tax imposes a tax on emissions.

Carbon taxes are the preferred instrument in South Africa and this is attributed to the advantages associated with adopting this instrument. If executed correctly, they can be cost-effective, this can also be because they are normally governed and enacted in terms of other instruments. Carbon Tax Act 15 of 2019 is regulated by the Customs and Excise Act. Thus, its administration is less complicated. The main challenge with the carbon tax is that the reduction of emissions within a specified period cannot be predicted.

The Carbon Tax Act 15 of 2019 came into law on 1 June 2019 and it imposes a tax on CO_2-eq GHG emissions. The gradual implementation approach is followed. Phase One started on the day it came into effect until 31 December 2022 and Phase Two is projected to run from 2023 to 2030. Phase One creates provisions for allowances, rebates as well as exemptions whereas the content of Phase Two is dependent on the outcomes of the first phase. The main advantage of the phased approach found in this study is that attempts to facilitate a just transition to a low-carbon economy by providing companies with an opportunity to adjust. The observed disadvantage of the approach is that the tax rate of R120 per ton of CO_2-eq GHG emissions is low.

This study considers and outlines the fundamental provisions of the Act in three parts. Part I deals with the imposition of the Act. Part II deals with allowances provided to taxpayers and Part III deals with the administrative aspects of the Act. Carbon taxation developed in line with the principles of good taxation should ensure that revenue is generated while achieving environmental objectives and also that there is some sort of integrity within the tax regime.

This study adopts the suggested criteria used to assess any environmentally-related tax system. The criteria include Environmental Effectiveness, Tax Revenue, Support for the tax, Legislative Aspects, Technical and Administrative viability, Competitiveness, Distributional effects, and Aligning policy spheres. Carbon Tax Act opines most of the items in the set criteria used to assess environmentally-related tax instruments. This study posits that the carbon tax instrument adopted in South Africa is suitable and apt for the country.

5.3. Addressing the research problem

Carbon tax imposes a tax on CO_2-eq GHG emissions for those emitting and also provide incentives to ensure that a smooth transition to a low-carbon economy is possible. In light of this, the primary question associated with this study is: what are the practical implications of the Carbon Tax Act on mining companies in South Africa and the sector in general?

The study holds that mining companies should embrace the need to transition to a low-carbon economy and further that for this transition to be smooth, the Carbon Tax Act on its own may not yield the desired outcome which is a just structural transition. Climate change mitigation strategies should be developed to reduce GHG emissions and these policies must be integrated to deliver the best possible results.

The study develops a case for ESG policies to be fully acknowledged and embraced by mining companies. Commitment to the ‘E’ in ESG is put forth as a practical implication of the Act on mining

companies. ESG represents policies that speak to the views and ambitions of corporations in addressing and responding to environmental, social and governance concerns and factors. The environmental aspect has the potential to reduce emissions. Additionally, the study argues for the implementation and investment in renewable energy as an alternative source of energy. These include Biodiesel, Geothermal energy, Hydrogen, Hydropower, Solar and Wind. These projects have the potential to reduce emissions thus, facilitating a transition to a low-carbon economy and therefore mining companies could invest in these to reduce their emissions and avoid their tax liability. Finally, the double-dividend hypothesis in this study is argued to potentially achieve the environmental benefit and generate revenue. This would mean that taxpayers are key players in the transition to a low-carbon economy.

In the end, because the Act aims to facilitate a just transition to a low-carbon economy. Mining companies have to implement changes within their operations that can reduce their emissions, accordingly, escaping their carbon tax liability and contributing to the global effort to transition to a low-carbon economy.

5.4. Final comments

This project uncovered practical implications of the Carbon Tax Act on South African mining companies. It examined the main implication of the Act which is to facilitate a transition to a low-carbon economy. In so doing, this study suggests projects that mining companies can consider implementing as well as the principles that they can adhere to in order to contribute to the facilitation of a structural transition to a low-carbon economy.

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