



Non-compliance to minimum emission standards
under air quality legislation and section 24 of the
Constitution of the Republic of South Africa, 1996

O Faku

 **orcid.org 0000-0002-3616-9575**

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Supervisor: Prof W du Plessis

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DEDICATION

I wish to dedicate this work to all young law students who are passionate about environmental justice. There is still a lot of work to be done to ensure that sustainable practices are adopted and implemented in order to conserve the

environment for the benefit of present and future generations. I hope my work encourages you to participate in that conversation and champion the change we want to see.

ABSTRACT

The state of air quality in South Africa suggests that air quality management measures might not have been effective. While inadequate enforcement of the environmental law is certainly a significant cause of ineffectiveness, it is demonstrated that proper monitoring of air quality data, and non-compliance with or postponement with environmental management measures are also major contributors. Undoubtedly, the government has made progressive attempts to regulate air quality, but there is still a room for improvement. This study examines whether non-compliance to minimum emission standards infringes section 24 of the *Constitution of the Republic of South Africa, 1996*.

It is argued in this study that non-compliance with the minimum emission standards has detrimental impacts on health and well-being, particularly for those within or near the industries that are not compliant with the emission standards. This is because minimum emission standards are used as measures to control the concentration of air pollutants that can legally be released into the atmosphere from a single pollutant source. Furthermore, the research analyses how companies such as Eskom and Sasol may misuse the process of postponement and condonation to avoid compliance with the law and the implications these non-compliances have on the community and the environment. A review is conducted on relevant environmental legislation and regulations applicable to environmental protection against air pollution and the measures applied to protect the environment and people. The study concludes with recommendations regarding improving air quality regulation and combating air pollution, based on findings that deficient compliance and enforcement measures remain a real challenge.

Key words: Minimum emission standards, air quality, non-compliance to minimum air quality standards, health and well-being, environmental right.

List of Abbreviation

AEL	Atmospheric Emission License
APPA	Atmospheric Pollution Prevention Act 45 of 1965
AQMP	Air Quality Management Plan
CONNEPP	Consultative National Environmental Policy Process
DEA	Department of Environmental Affairs
DEFF	Department of Environment, Forestry and Fisheries
DFFE	Department of Forestry, Fisheries and Environment
ECA	Environmental Conservation Act 73 of 1989
IJERPH	International Journal of Environmental Research and Public Health
JEEM	Journal of Environmental Economics and Management
JHRE	Journal of Human Rights and the Environment
MEC	Member of the Executive Council
NAAQS	National Ambient Air Quality Standards
NAQO	National Air Quality Officer
NEMA	National Environmental Management Act
NEMAQA	National Environmental Management: Air Quality Act
PER	Potchefstroom Electronic Law Journal
PM	Particulate Matter
PM _{2.5}	Inhalable Particulate Matter (diameter less than <2.5 µm)

PM ₁₀	Thoracic Particulate Matter (diameter less than <10 µm)
SAJELP	South African Journal of Environmental Law and Policy
SAJHR	South African Journal on Human Rights
SD	Sustainable Development
UNICEF	United Nations Children's Fund
WHO	World Health Organisation

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Chapter 1: Introduction

1.1 Problem statement

The *National Environmental Management Act: Air Quality Act 39 of 2004* (NEMAQA) regulates, amongst others, activities that are detrimental to the environment, particularly air pollution. The Minister may list activities that potentially have or may potentially have a significant detrimental impact on "the environment, including health, social conditions, economic conditions, or cultural heritage."¹ The list must contain minimum emission standards that apply to the listed activities.² A minimum emission standard refers to:³

A substance or mixture of substances resulting from a listed activity and identified in the notice, including:

- (i) The permissible amount, volume, emission rate or concentration of that substance or mixture of substances that may be emitted; and
- (ii) The manner in which measurements of such emissions must be carried out.

Although the NEMAQA regulates minimum emission standards in South Africa, there have been issues with large corporations such as Eskom and Sasol not complying and postponing the implementation of authorisation conditions.⁴ The application for postponement must be accompanied by detailed reasons justifying the need for postponement application, a certified copy of the announcing the intention to apply for postponement, and an Atmospheric Impact Report compiled by the relevant registered person.⁵

The Act provides for transitional arrangements for listed activities that commenced before the enactment of the Act.⁶ The Minister of Forestry, Fisheries and Environment has to provide a date on which the notice takes effect,⁷ and may grant

¹ Valleron *Fundamentals of Air Pollution* 69.

² See the listed activities and minimum standards in GN 893 in GG 37054 of 22 November 2013 (Hereafter GN 893); Also see Valleron *Fundamentals of Air Pollution* 69.

³ Section 21 (3)(a) of NEMAQA.

⁴ PMG <https://pmg.org.za/committee-meeting/33374/>.

⁵ Regulation 6 of the Listed Activities and Associated Minimum Emission Standards Identified in terms of section 21 of NEMAQA, GN 893 of 2013.

⁶ NEMAQA.

⁷ Section 21(2) & (3) of NEMAQA.

extensions for non-compliance in accordance with the Department's guidelines.⁸ Sasol and Eskom were previously granted extensions but at the end of 2021, the National Air Quality Officer refused to grant Eskom any further extensions.⁹

It may be argued that non-compliance with the minimum emission standards poses a great risk to the life, health and well-being of the people in South Africa, particularly the residents in Mpumalanga, where Eskom's power stations are based.¹⁰ The argument is that non-compliance violates section 24 of the *Constitution of the Republic of South Africa, 1996* (Constitution).¹¹ Lloyd argues that non-compliance is inconsistent with the provisions of the Constitution because it fails to "respect, promote, protect, and fulfil the rights contained in the Bill of Rights."¹²

The court in *Trustees for the Time Being of Groundwork Trust v Minister of Environmental Affairs and Others*,¹³ confirms this view and states that clean air and a healthy atmosphere are closely linked to the environmental right in the Constitution.¹⁴ Section 24(b) of the Constitution states that the government must prevent pollution and ecological degradation while promoting justifiable economic and sustainable development.¹⁵ As indicated, Eskom and Sasol in the past were granted extensions to keep the economy going. It would therefore be necessary to determine whether non-compliance with the minimum emission standards in such instances is justified and whether non-compliance in this instance may constitute justifiable economic and social development or non-compliance with the minimum emission standards constitutes a breach of section 24 of the Constitution.

⁸ Burns and Boiler 2013 *JHRE* 118. Bega indicates that in 2010 Eskom was granted a postponement to meet the minimum emission standards set by the NEMAQA for its plants in Mpumalanga, Bega *Mail & Guardian*.

⁹ Lloyd 2019 <https://cer.org.za/news/eskoms-latest-attempt-to-avoid-pollution-standards-met-with-vigorous-opposition>.

¹⁰ Kloepfe 1998 *IJOHR* 72 states that an activity such as pollution that impacts on the natural environment is not only a crime against nature but a violation of human rights. Also see Boyd 2019 *Ann Glob Health* 146.

¹¹ Kloepfe 1998 *IJOHR* 72.

¹² Lloyd 2019 <https://cer.org.za/news/eskoms-latest-attempt-to-avoid-pollution-standards-met-with-vigorous-opposition>.

¹³ *Trustees for the Time Being of Groundwork Trust v Minister of Environmental Affairs and others* (399724 of 2019) [2022] ZAGPPHC 2 (18 March 2022).

¹⁴ Para 25.

¹⁵ Section 24(b) of the *Constitution of the Republic of South Africa, 1996* (Constitution).

1.2 Research question

The research question of this study is, does non-compliance with the minimum emission standards by companies violate the environmental right in section 24 of the Constitution?

1.3 Aim of the study

This study aims to analyse to what extent non-compliance with the minimum emission standards violates the constitutional environmental right in South Africa.

1.4 Research methodology

Research is a process that is conducted through qualitative, quantitative, and mixed-researched methods.¹⁶ This research uses a mixed-research method of research and literature review to formulate a suitable approach to develop the theoretical framework upon which the study will be based. The literature review will consult primary sources, supplemented by secondary sources of law.¹⁷ Primary sources include the Constitution, legislation, regulations, and case law. The study will also utilise sources such as journal articles, academic books, and internet sources.

1.5 Framework of the study

Chapter two provides a background to environmental legislation and air quality management in South Africa as a brief historical context regarding air quality management, the state of air quality in South Africa, and the need to address air quality in general. Furthermore, it discusses the concept of sustainable development in relation to air quality management.

Chapter three discusses section 24 of the Constitution of the Republic of South Africa and critically analyses the provision in relation to air quality.

¹⁶ Creswell and Creswell 2012 *Research Design* 40. Also see Venter *Legal Research*.

¹⁷ Du Plessis 2007 *PER* 23; Kroeze 2013 *PER* 36; Also see Venter *Legal Research*.

Chapter four discusses minimum air emission standards in terms of NEMAQA, the practical application thereof and the postponement of compliance with the minimum air emission standards. Additionally, the chapter discusses how the courts addressed issues caused by non-compliance to minimum emission standards in South Africa. The chapter also considers whether non-compliance to minimum emission standards violates section 24 of the Constitution.

Chapter five concludes the study and makes some recommendations.

Chapter 2: Background to environmental legislation and air quality management

2.1 Introduction

The purpose of this Chapter is to discuss the state of the air quality in South Africa and indicates why there is a need to improve the air quality in the country. To achieve this, the chapter discusses and highlights how environmental legislation has developed over the years to protect not only the environment but also human health and well-being. Furthermore, the chapter discusses the concept of sustainable development and how it balances social, economic, and environmental considerations in the context of air quality management.

2.2 Historical context of air pollution legislation

Similarly, to other countries, environmental legislation in South Africa shifted its focus from protection of species to a more comprehensive approach that encompasses the conservation of habitats and ecosystems towards the realisation of sustainable development.¹⁸ In the 1960s government took a more comprehensive approach to environmental management, also taking considering industries' impacts on human health and well-being.¹⁹ In 1965 the then government realised the importance to regulate South Africa's air quality and introduced the *Atmospheric Pollution Prevention Act* 45 of 1965 (APPA).²⁰ The APPA regulated the control of four types of air pollutants particularly, noxious, and offensive gases, dust, smoke, and emissions from vehicles.²¹ For purpose of this discussion, the focus is only on noxious and offensive gases. The APPA regulated atmospheric pollution from noxious and offensive gas emissions through source control,²² this meant that

¹⁸ SD was established by the Brundtland Report in 1972 and adopted at the Rio Earth Summit in 1992. Also see Muller "Environmental Governance in South Africa" 69. A detailed discussion of this concept is found in para 2.4.

¹⁹ Engelbrecht & Kornelius "Air quality management" 386.

²⁰ The Act was promulgated on 17 April 1965 and came into effect on 21 April 1965; Kidd *Environmental Law* 157.

²¹ Engelbrecht and Kornelius "Air quality management" 388. "Noxious and offensive gases", "dust" and "smoke" were defined in s 1 of APPA.

²² Section 8 of APPA.

activities that fell under those listed as scheduled processes²³ had to have registration certificates.²⁴ The Chief Air Pollution Control Officer (Chief Officer) would only issue a certificate if they were convinced that the “best practicable means”²⁵ were taken to prevent or reduce the emission of noxious and offensive gases, into the atmosphere.²⁶ The Chief Officer would first issue a preliminary registration certificate and only if the applicant complies with the conditions in the preliminary registration certificate, would he or she issue have issued a final registration certificate.²⁷

Furthermore, the Act did not provide for consideration and management of ambient air quality as such and lacked effective emission monitoring mechanisms.²⁸ This implies that the extent to which industrial pollution would be permitted rested at the discretion of the Chief Officer.²⁹ This is because determining whether the person applying for a registration certificate would implement the best practicable means, was subjective and did not include environmental considerations.³⁰

Criminal proceedings had no effect as the fine for non-compliance was very low (R500) for a first conviction.³¹ The responsible department resorted to applying for an interdict instructing cessation of such scheduled activities until the necessary authorisation was obtained.³² In the case of *Tergniet and Toekoms Action Group v Outeniqua Kreosootpale*,³³ the applicants sought an order declaring the processes unlawful or an interdictory relief prohibiting the respondent from conducting any

²³ This is defined as any process or works listed in the second schedule of the Act – s 1. This list also includes power generation processes.

²⁴ Section 9(1) of APPA.

²⁵ Defined in s 1 of APPA.

²⁶ Section 9(2)(a)(i) of APPA.

²⁷ Section 10 of APPA. The period of validity and conditions were regulated by sections 11 and 12.

²⁸ Engelbrecht and Kornelius “Air quality management” 388. The concentration of toxins in the smoke was determined by how dark the colour of the smoke was, see section 17(1)(a) of APPA as well as the first schedule.

²⁹ Kidd *Environmental Law* 158.

³⁰ Kidd *Environmental Law* 157; The National Ambient Air Quality Standards (NAAQS) - GN 1210 in GG 32816 of 24 December 2009.

³¹ Section 8(1) constituted an offence. Section 46 dealt with penalties.

³² Kidd *Environmental Law* 158; See in the case of *Minister of Health and Welfare v Woodcarb (Pty) Ltd* 1996 (3) SA 155 (N) para 161-162.

³³ *Tergniet and Toekoms Action Group and others v Outeniqua Kreosootpale (Pty) Ltd and others* (10083/2008) [2009] ZAWCHC 6 Unreported case.

activities in terms of section 8 of the APPA without a registration certificate authorising such activity.³⁴ In response to the application sought, the first respondent held that the relief sought constituted a final relief and, therefore, the relief could not be granted until the disputed factual issues were heard at the trial court.³⁵ The court ruled in favour of the applicant and restrained the respondent from conducting any processes without a registration certificate.³⁶ It is important to note that the sections of the Act bound the State and, therefore, state entities such as Sasol and Eskom.³⁷ In *Hichange Investments (Pty) Ltd v Cape Products Company (Pty) Ltd t/a Pelts Products & Others*,³⁸ the applicants resorted to section 28 of the *National Environmental Management Act 107 of 1998 (NEMA)*³⁹ dealing with pollution to address the impacts of air pollution of a holder of a provisional registration certificate in terms of the APPA.

Concerns grew between 1972 and 1982 about the high pollution levels in South Africa; this led to the formation of anti-pollution groups that made it their objective to embark on campaigns that promote a clean and neat environment in the country.⁴⁰ In November 1973, organisations such as the Wildlife Society adopted a new agenda that formulated new aims which shifted focus away from the conservation of wildlife towards a broader issue that encompassed the conservation of the earth, air, water, soil, plants and animals.⁴¹

The *Environmental Conservation Act 73 of 1989 (ECA)* was enacted. Still, it did not regulate air pollution directly, but it prohibited environmental pollution by identifying various activities that have or may potentially have a detrimental impact on the environment.⁴² This meant that none of the activities identified in section 21(1) of

³⁴ Para 12.

³⁵ Para 15.

³⁶ Para 50.

³⁷ Sections 14-26 were excluded – in relation to atmospheric pollution by smoke. The state only had to give notice to a local government that it would site a fuel burning appliance or construct a chimney in terms of section 16 – see section 47(2). The other provisions would apply to that state and its entities – s 47(1).

³⁸ 2004 JDR 0040 (E). Also see Du Plessis 2004 *SAJELP* 135-151.

³⁹ See discussion below.

⁴⁰ Steyn 2002 *Historia* 9.

⁴¹ Steyn 2002 *Historia* 10.

⁴² Section 21(1) of ECA. See part VI of ECA that focused on the control of environmental pollution.

the ECA could be carried out without authorisation.⁴³ The then Minister of Environmental Affairs and Tourism promulgated regulations relating to activities identified in section 21(1) of the ECA.⁴⁴ Regulation 4 provides a guideline on how to apply for an authorisation for an activity to be undertaken.⁴⁵ Although the legislation did not explicitly regulate air pollution, it was included in the activities that had detrimental impact on the environment and for which an environmental impact assessment had to be undertaken.⁴⁶

In the early 1990s, as South Africa transitioned to democracy, the need for a new approach to environmental management became apparent due to a lack of legislation adequately advocating for environmental protection.⁴⁷ The *Constitution of the Republic of South Africa Act 200 of 1993* (Interim Constitution) provided for environmental protection in terms of section 29.⁴⁸ The legislation issued before the Interim Constitution, remained in place including the ECA and APPA. The new government advanced the importance of environmental protection and sustainable development and released the Green Paper on Environmental Policy in this regard.⁴⁹ This policy proposed a new legal framework for an integrated and holistic approach to environmental management and was aimed at giving effect to an environmental constitutional right.⁵⁰ This policy led to the drafting and publication of the White Paper on Environmental Management Policy in May 1998.⁵¹ The White Paper built on the outcomes of the Consultative National Environmental Policy Process

⁴³ Such an authorisation can only be acquired after an impact report has been considered. Section 22(1) of ECA.

⁴⁴ Item 2 of GN R1183 in GG 18261 of 5 September 1997.

⁴⁵ Regulation 4 of GN R1183 of 1997.

⁴⁶ See section 21(2)(f) and (h) of ECA.

⁴⁷ Kidd *Environmental Law* 35.

⁴⁸ The provision provides that everyone has the right to an environment that is not detrimental to health and well-being.

⁴⁹ Green Paper on an Environmental Policy for South Africa Draft October 1996 https://www.gov.za/sites/default/files/gcis_document/201409/environmentalpolicy.pdf.

⁵⁰ Green Paper on an Environmental Policy for South Africa Draft 4.

⁵¹ White Paper on Environmental Management Policy July 1997 https://www.dffe.gov.za/sites/default/files/legislation/2023-09/environemtal_management_0.pdf.

(CONNEPP), an environmental policy development process that involved substantial public participation.⁵²

NEMA was promulgated as a result of this White Paper, as the overarching environmental framework legislation in South Africa which sets out the duties and responsibilities of various organs of state with activities that may have an impact on the environment.⁵³ It introduced principles for decision making on matters that affect the environment⁵⁴ and procedures for coordinating environmental functions exercised by organs of state.⁵⁵ NEMA gives effect to section 24 of the Constitution.⁵⁶ In relation to air pollution section 24(a) of the Constitution states that “everyone has a right to an environment that is not harmful to their health and well-being”, while section 24(b) mandates the government to introduce legislation and other measures to prevent pollution including air pollution.⁵⁷ Section 24 also introduced the concept of sustainable development which provides that the government must give effect to the environmental right “through reasonable legislative and other measures”.⁵⁸ When making decision that may affect the environment, the state must weigh the economic benefits against the environmental and social impacts of the activity.⁵⁹ Subsequently, parliament introduced NEMAQA to deal with air pollution.⁶⁰

2.3 The state of air quality in South Africa

Similar to other developing countries, South Africa is faced with air quality challenges due to overpopulation and accelerated industrialisation.⁶¹ According to the air quality study conducted by World Health Organisation (WHO), airborne

⁵² Department of Environmental Affairs White Paper on Environmental Management Policy Draft 5.

⁵³ Listed in Schedule 1 of NEMA in GN 152 in GG 37401 of 28 February 2014 as amended.

⁵⁴ Section 2 of NEMA.

⁵⁵ Section 2(1) of NEMA. Also see Kidd *Environmental Law* 36.

⁵⁶ Preamble of NEMA.

⁵⁷ See aim of NEMAQA; section 24 of the Constitution.

⁵⁸ Section 24(b)(iii) of the Constitution. See para 3.2.2 of the study for a detailed discussion.

⁵⁹ *Fuel Retailers Association of Southern Africa v Director General: Environmental Management and Others* 2007 (6) SA 4 (CC) para 4; this case will be discussed in detail on the next chapter. On the *Fuel Retailer* case see the articles published in 2008 *SAJELP* that was dedicated to a discussion of this case.

⁶⁰ See para 4.2 of the study.

⁶¹ Manisalidis et al 2020 *Frontiers in Public Health* 2.

pollutants are responsible for killing an estimate of 7 million people globally every year.⁶² Air pollution not only contributes to mortality but also contributes to respiratory diseases in that small particles of variables infiltrate the respiratory system through inhalation, hinders development and causes mental health problems.⁶³ This makes it the biggest environmental health risk of this generation.⁶⁴

The rising level of air pollution comes from residual fuel burning devices also within households, coal-fired power generation, fugitive emissions from industrial operations, poorly controlled industrial and commercial fuel burning, dust from mine tailings impoundments, waste disposal releases, asbestos related exposure and agricultural burning and wildfires.⁶⁵ These pollutants have a detrimental effect on the atmosphere which provides protection through absorption of toxic ultraviolet solar radiation.⁶⁶

During a study conducted between 2005 and 2019, Millar *et al*/collected ambient air quality data from Secunda and Embalenhle, which are both are located in South Africa.⁶⁷ The study compared the collected ambient air quality data against the national ambient air pollution standard and the WHO's Air Quality Guidelines and found that the inhalable Particulate Matter (PM₁₀), measured at Embalenhle between 2009 and 2019, exceeded the respective National Ambient Air Quality Standards (NAAQS)⁶⁸ for each year for which the data availability was met.⁶⁹

However, even though the inhalable PM₁₀ only exceeded the respective NAAQS limit once during the period of the study in Secunda, the PM₁₀ almost exceeded the

⁶² WHO *About Air* <https://www.unep.org/explore-topics/air/about-air>.

⁶³ Manisalidis *et al* 2020 *Frontiers in Public Health* 1.

⁶⁴ WHO *About Air* <https://www.unep.org/explore-topics/air/about-air>.

⁶⁵ Engelbrecht & Kornelius "Air quality management" 381. Also see Piketh *et al* "Investigating Southern African Biomass Burning Emissions through Direct Measurements from Controlled Burning"; Matandirotya and Burger 2023 *Air Qual Atmos Health* 263–276; Matandirotya and Burger "The Nexus Between Biomass Burning, Black Carbon Air Pollution and Planetary Health in Africa"; Muyemeki *et al* 2022 *Air Qual Atmos Health* 2157–2169; Lindeque, Burger and Piketh 2021 *Atmosphere* 1405.

⁶⁶ Manisalidis *et al* 2020 *Frontiers in Public Health*.

⁶⁷ Millar *et al* 2022 *BMC Public Health* 1.

⁶⁸ GN 1210 in GG 32816 of 24 December 2009. The NAAQS limit for PM₁₀ was 40µg/m³ for the duration of the study.

⁶⁹ Millar *et al* 2022 *BMC Public Health* 5.

NAAQS at both sites for all years for which the data were collected.⁷⁰ This indicates that the PM₁₀ was at its all-time high throughout the duration of the study and there was no evident effective attempt to reduce the PM₁₀ concentration. Additionally, the PM₁₀ annual concentration at both sites exceeded the WHO recommended guidelines for every year for which the data was collected and analysed.⁷¹ This means that even though pollution concentrations levels were below the NAAQS limit, the concentration was still too high for human exposure in terms of the WHO air quality guidelines. The WHO guidelines play a crucial role in informing and setting the South African national standards even though the WHO air quality guidelines are unattainable in most countries.⁷²

The growing concern in the number of priority areas⁷³ in South Africa over the years and the failure to bring them into sustainable compliance with ambient air quality objectives within the agreed timeframes in terms of the Air Quality Management Plans⁷⁴ (AQMPs) is a clear indication of the deteriorating state of air quality.⁷⁵ Priority areas refers to airsheds that do not meet the minimum ambient air quality standards or airsheds that the MEC is of the opinion that they need special measures in respect of air quality in that proclaimed area.⁷⁶ Additionally, such areas will also be proclaimed where emissions from one provincial area or country compromise the ambient air quality of an adjacent provincial area or country, and such areas will be declared priority areas until the air quality management matters are resolved.⁷⁷

⁷⁰ Millar *et al* 2022 *BMC Public Health* 5-6. Also see Adesina *et al* 2022 *6 Cleaner Engineering and Technology*, Segakweng *et al* 2022 *Atmospheric Chemistry and Physics*.

⁷¹ Millar *et al* 2022 *BMC Public Health* 6.

⁷² Garland *et al* 2021 *Clean Air Journal* 2.

⁷³ See e.g. Declaration in terms of section 18(1) of the NEMAQA of Waterberg-Bojanala National Priority Area - GN 495 in GG 35435 of 15 June 2012; Highveld Priority Area - GN 1123 in GG 30518 of 23 November 2007; of the Vaal Triangle Air-Shed Priority Area - GN 365 in GG 28732 of 21 April 2006.

⁷⁴ See the Vaal Triangle Air-Shed Priority Area AQMP – GN 613 in GG 32263 of 29 May 2009 and GN 693 in GG 44945 of 6 August 2021 for 2nd draft AQMP; Highveld as Priority Area AQMP – GN 144 in GG 35072 of 2 March 2012; Waterberg-Bojanala National Priority Area AQMP – GN 1207 in GG 39489 of 9 December 2015. Not all these AQMPs have brought into compliance at the time of the study.

⁷⁵ Own emphasis and observation.

⁷⁶ Section 18 of NEMAQA; Engelbrecht and Kornelius "Air quality management" 392.

⁷⁷ This is known as transboundary; see section 18(2) of NEMAQA.

South Africa declared three national priority areas, the first one being the Vaal Triangle Airshed Priority Area (VTAPA) which was declared in April 2006. It extends across the provincial borders of Gauteng and Free State province.⁷⁸ This area is highly industrialised, consisting of various industries such as coal fired power plants, petroleum industries and smaller industrial and commercial activities, which directly impact the residents' health and well-being.⁷⁹ The second area is known as the Mpumalanga Highveld Priority Area (HPA), declared as such in November 2007 and consists of parts of the Ekurhuleni municipality and parts of the Mpumalanga Highveld.⁸⁰

Lastly, the Waterberg/Bojanala Priority Area (WBPA) was declared in June 2012 encompasses the Bojanala Platinum District Municipality in the North West province and the Waterberg District Municipality in the Limpopo province.⁸¹ Once a priority area has been declared, the National Air Quality Officer must compile an AQMP within six months or within a certain duration determined by the minister after declaring such a priority area.⁸² The purpose of AQMPs is to ensure that after the management plan is implemented, the air quality in that area is brought into compliance within the agreed timeframes and that the air quality is "effectively and efficiently" maintained throughout the operational phase of the project.⁸³ Essentially, AQMPs provide clear descriptions of measures and resources needed to implement a strategy or strategies in order to achieve certain objectives on air quality.⁸⁴

The AQMP for the first declared priority area (VTAPA) was only published in May 2009.⁸⁵ The AQMP indicates that there were limited ambient monitoring data available throughout its development stage due to poor data availability and quality.

⁷⁸ GN 365 in GG 28732 of 21 April 2006.

⁷⁹ Department of Environmental Affairs Vaal Triangle Airshed Priority Area Air Quality Management Plan 6; GN 613 in GG 32263 of 29 May 2009.

⁸⁰ GN 1123 in GG 30518 of 23 November 2007.

⁸¹ GN 495 of GG 35435 of 15 June 2012.

⁸² Section 19(1)(2) of *NEMAQA*.

⁸³ Department of Environmental Affairs Vaal Triangle Airshed Priority Area Air Quality Management Plan 6.

⁸⁴ Department of Environmental Affairs The Second-Generation Vaal Triangle Airshed Priority Area Air Quality Management Plan: Draft Baseline Assessment Report; GN 693 in GG 44945 of 6 August 2021.

⁸⁵ GN 613 in GG 32263 of 29 May 2009.

The limited information indicated a higher PM₁₀ concentration level over the vast majority of the VTAPA.⁸⁶ Moreover, the primary pollutant of concern within the VTAPA was this high PM₁₀ concentration level. The plan indicated six hotspot zones⁸⁷ and prioritised these zones during the implementation of intervention strategies. These strategies were based on the adverse impact this pollutant had on human health and the environment rather than the extent of the emissions.⁸⁸ Various intervention strategies were developed, requiring a detailed emission reduction strategy from each industry in support of the intervention's overarching objectives as set out in the AQMP.⁸⁹

In 2021, the second generation AQMP for VTAPA was published, five years after the first AQMP was published.⁹⁰ The second-generation AQMP gave a thorough insight into the state of air quality in the VTAPA at the time.⁹¹ The AQMP found that PM₁₀, PM_{2.5} and NO₂ concentrations were constantly non-compliant with the NAAQS for most of the time, except for SO₂ concentrations being the only pollutant showing compliance with the NAAQS.⁹² Both AQMPs for VTAPA were deemed to be of a high standard.⁹³ However, the second generation AQMP received a lot of criticism. In contrast, the first generation AQMP received an overall B grade from the researchers conducting this investigation,⁹⁴ indicating that its air quality assessment was satisfactory with minor omissions and shortcomings. The second-generation AQMP

⁸⁶ Department of Environmental Affairs *Vaal Triangle Airshed Priority Area Air Quality Management Plan* 11.

⁸⁷ Department of Environmental Affairs *Vaal Triangle Airshed Priority Area Air Quality Management Plan* 12.

⁸⁸ Department of Environmental Affairs *Vaal Triangle Airshed Priority Area Air Quality Management Plan* 12.

⁸⁹ See Department of Environmental Affairs *Vaal Triangle Airshed Priority Area Air Quality Management Plan* 15.

⁹⁰ GN 693 in GG 44945 of 6 August 2021.

⁹¹ Department of Environmental Affairs *The Second-Generation Vaal Triangle Airshed Priority Area Air Quality Management Plan* vi.

⁹² Department of Environmental Affairs *The Second-Generation Vaal Triangle Airshed Priority Area Air Quality Management Plan* vii.

⁹³ Moreoane, Mukwevho and Burger 2021 *Clean Air Journal* 1.

⁹⁴ These gradings were determined by the researchers (Moreoane, Mukwevho and Burger above) based on requirements of the AQMP manual, the framework and NEMAQA.

received a C grade for quality assessment, indicating that its assessment was satisfactory despite its shortcomings.⁹⁵

Being the second priority area, the Highveld Priority Area (HPA) only had its AQMP published in March 2012, five years after the area was declared a priority area.⁹⁶ According to the baseline assessment of this AQMP, industrial sources accounted for the largest contributors to pollution emissions.⁹⁷ Furthermore, the AQMP assessment discovered that despite the HPA's reasonably acceptable air quality, nine hotspot areas exceeded the ambient air quality standards limit for SO₂, PM₁₀ and O₃.⁹⁸ Poor ambient air quality has the potential for detrimental health impacts. Currently, the second draft generation AQMP for HPA is still in its development stage.

Lastly, the AQMP for WBPA was published in December 2015, three years after the area was declared a priority area.⁹⁹ The AQMP had limited ambient monitoring data available similar to the VTAPA, as the data was derived from only nine active monitoring stations.¹⁰⁰ The available air quality data indicated that PM₁₀, PM_{2.5} and NO₂ concentrations were relatively low compared to the NAAQS limit in Waterberg and Bojanala, with PM₁₀ exceeding the limit only at two monitoring stations in Waterberg, two in Bojanala and they were mainly near industrial and mining sources.¹⁰¹

It has been over a decade since the areas have been declared priority areas and it seems that the air quality in all these priority areas are not in compliance with the NAAQS despite the developments of the AQMPs.¹⁰² Furthermore, it appears that the government does not have adequate resources to ensure that the available data at

⁹⁵ Moreoane, Mukwevho and Burger 2021 *Clean Air Journal* 8.

⁹⁶ GN 144 in GG 35072 of 2 March 2012.

⁹⁷ Department of Environmental Affairs Highveld Priority Area Air Quality Management Plan x.

⁹⁸ Department of Environmental Affairs Highveld Priority Area Air Quality Management Plan xii.

⁹⁹ GN 1207 in GG 39489 of 9 December 2015.

¹⁰⁰ Department of Environmental Affairs The Waterberg-Bojanala Priority Area Air Quality Management Plan and Threat Assessment iv.

¹⁰¹ Department Environmental Affairs The Waterberg-Bojanala Priority Area Air Quality Management Plan and Threat Assessment iv-v.

¹⁰² Centre for Environmental Rights *Broken Promises the Failure of the Highveld Priority Area* 5; PMG <https://pmg.org.za/committee-meeting/170613/>. Also see paragraphs above.

operational monitoring stations are of adequate quality to effectively keep track of whether the air quality at the declared priority areas improves or not.¹⁰³ Some stations are also not working.¹⁰⁴ The government cited lack of infrastructure maintenance, power disruption, outdated infrastructure and low technical capacity as some of the causes for poor data monitoring.¹⁰⁵

Initially, the government installed 132 ambient air quality monitoring stations but only 107 were operational. Another 70 privately owned stations also reported live to the South African Air Quality Information System (SAAQIS). These monitoring stations monitored various pollutants, including PM₁₀, PM_{2.5}, CO, SO₂, O₃ and NO₂.¹⁰⁶ However, from the 107 operational monitoring stations more than 75% of these stations did not meet the minimum data requirements. This meant that the majority of these stations did not produce credible data.¹⁰⁷ Furthermore, this indicates a decline in comparison to the 27 monitoring stations that met the minimum data requirements in 2021, to only 25 in 2022.¹⁰⁸

A 2021 Eskom report noted that from the seven operational power stations, only one station showed compliance with the emission standards while six other stations failed to meet the emission standards as per the legislation.¹⁰⁹ However, by the end of September 2021, all seven power stations were non-compliant with the monthly emission standards.¹¹⁰ This is a significant indicator of the current state of the air quality and the air quality monitoring measures in South Africa, despite legislation, regulations, implementation, and management plans in place, compliance with such regulations seems to remain the biggest problem.

¹⁰³ The government has 107 active monitoring stations and more than 75% of them do not produce adequate quality data; See the paragraph below for a detailed discussion.

¹⁰⁴ See South African Air Quality Information Systems (SAAQIS) <https://saaqis.environment.gov.za/SAAQIS>. SAAQIS <https://saaqis.environment.gov.za/Pagesfiles/Chapter%206%20Ambient%20Air%20Quality%20Monitoring.pdf/>; Booyesen <https://www.iol.co.za/capetimes/news/dffe-requests-funding-for-more-air-quality-monitoring-stations-50cf25ee-3540-44a6-ac46-7fe0d694d3cc>.

¹⁰⁵ Gwaze "State of Air Report and NAQI" 10.

¹⁰⁶ Gwaze "State of Air Report and NAQI" 4.

¹⁰⁷ Gwaze "State of Air Report and NAQI" 5.

¹⁰⁸ Gwaze "State of Air Report and NAQI" 9.

¹⁰⁹ Eskom "Condensed Group interim Financial Statements" 5.

¹¹⁰ Eskom "Condensed Group interim Financial Statements" 5.

2.4 Impacts of poor ambient air quality and the need to address the current state of air-quality in South Africa

The current state of air quality in South Africa has detrimental health impacts not only on humans but also on the ecosystem. The ecotoxicity from air pollution directly affect species or the organisms that the species feed on and thus weakens the abundance and diversity of those species in the ecosystem.¹¹¹ The negative impacts on mammals are similar to those affecting humans. Stressors introduced into the environment may have detrimental impacts on the ecosystem, meaning higher concentrations of pollutants may lead to a regression of some ecological species and other organisms in the food chain.¹¹²

Exposure to abnormal concentration levels of air pollutions has detrimental impacts on health and may lead to chronic and acute respiratory diseases and other cardiovascular-related diseases.¹¹³ Air pollutants may “damage fluid dynamics in the respiratory system directly” through “airway inflammation and indirectly by altering a person’s immune response”.¹¹⁴ More so, toxins from air pollution have the potential to damage the lungs and other respiratory cells, these implications are more severe for children. Studies concluded that the lung capacity of children residing in air-polluted environments may be reduced by at least 20% and that such children often suffer from respiratory problems later in their lives due to air pollution.¹¹⁵

A study conducted by the United Nations Children’s Fund¹¹⁶ (UNICEF), shows that inhaling airborne pollutants can damage brain tissue and interfere with cognitive development in young children with long-term implications.¹¹⁷ Similarly, a recent study conducted in Thohoyandou in the Limpopo Province, assessing the health

¹¹¹ Vallero *Fundamentals of Air Pollution* 197 & 342.

¹¹² Vallero *Fundamentals of Air Pollution* 342.

¹¹³ Vallero *Fundamentals of Air Pollution* 255.

¹¹⁴ Also see Manisalidis *et al* 2020 8 *Front Public Health* 14; Cairncross *et al* “Climate Change, Air Pollution and Health in South Africa”.

¹¹⁵ Rees “Clear the air for children The impact of air pollution on children” 8 – 10.

¹¹⁶ UNICEF is a United Nations International Children’s Emergency Fund that mainly focuses on providing humanitarian aid to children across the globe.

¹¹⁷ Rees “Clear the air for children The impact of air pollution on children” 9 - 24.

implications of fine particulate matter in the ambient air of that community,¹¹⁸ found that PM_{2.5} concentration measured was below the NAAQS yearly limit¹¹⁹ but above the yearly WHO guidelines.¹²⁰ This still poses a health hazard, particularly to the children and infants in that community, because of their higher respiratory rate, larger lung surface in relation to their body weight and underdeveloped physiological system.¹²¹

The results of the study reflect that despite the ambient air pollution levels being compliant with the NAAQS limit, these levels of concentrations may still have substantial adverse effects on health and the only way to protect human health effectively is to lower the NAAQS limits to a level that is conducive to human health.¹²² This demonstrates that South Africa has lenient and outdated air quality regulation restrictions, leading to detrimental health impacts that might have lifetime implications.

In addition to the effects of air pollution on humans and the ecosystem as discussed above, air pollution also has a detrimental impact on building infrastructures. An increase in the concentration of air pollutants functions as an external agent that accelerates the degradation of the building material's physical and chemical composition.¹²³ Moreover, the study found that the presence of air pollutants in building infrastructure reduces the compressive strength of the infrastructure.¹²⁴ In addition, air pollutants expedite the corrosion of irreplaceable materials such as monuments and historical structures.¹²⁵ Although the damage to building materials is considered less important in comparison to the impact of air pollution on human

¹¹⁸ Edlund *et al* 2021 *IJERPH*.

¹¹⁹ The NAAQS annual limit in terms of the study was 20 µg/m³ and WHO limit was 10µg/m³.

¹²⁰ Edlund *et al* 2021 *IJERPH* 7.

¹²¹ Edlund *et al* 2021 *IJERPH* 1.

¹²² Edlund *et al* 2021 *IJERPH* 9; Mukwevho, Relief and Burger 2022 *Clean Air Journal* 1.

¹²³ Sharma, Dakshina Murthy and Sumanth 2023 *Materials Today: Proceedings* 1-2; Manisalidis *et al* 2020 *Frontiers in Public Health* 9.

¹²⁴ Sharma, Murthy and Sumanth 2023 *Materials Today: Proceedings* 5.

¹²⁵ Vallero *Fundamentals of Air Pollution* 376.

health and ecosystems, the costs certainly affect society's welfare, threaten public safety and may result in unnecessary financial expenditures.¹²⁶

Lastly, air pollution and climate change are inextricably related, air pollutants' emissions have a significant impact on the climate.¹²⁷

2.5 Sustainable development in the context of air quality management

The modern rate of industrialisation has led to a significant increase in economic activities, which accelerated the rate of environmental degradation.¹²⁸ This created conflict in developing countries between the need for development and the need to conserve and preserve the environment, which is where the notion of sustainable development comes into play.¹²⁹ This concept is defined as the ability of the present generation to meet their present needs "without compromising the ability of the future generations to also meet their own needs".¹³⁰ This means that the current generation's use of natural resources such as the air, land, and water for their benefit must be exercised in a manner that also preserves the natural resources for future generation.¹³¹

In 1972, at the Stockholm Conference,¹³² it was acknowledged that humans harm the environment through development. Article 8 of the Stockholm Declaration acknowledges the interdependence of socio-economic development, which states that economic and social development is important for maintaining satisfactory living and working conditions, as well as to foster conditions that are required for the improvement of quality of life.¹³³ This was informed by the alarming rate of environmental degradation, but it was only after the Brundtland Report that the

¹²⁶ Vallero *Fundamental of Air Pollution* 369.

¹²⁷ Euripidou *et al* 2022 *Clean air journal* 1. Also see Du Toit, Soyapi and Kotzé 2024 *RECIEL*.

¹²⁸ Dugard and Tladi "International environmental law" 594.

¹²⁹ Dugard and Tladi "International environmental law" 594.

¹³⁰ Chapter 2 of the Brundtland Report 1987; Coetzee *Sustainable development in South Africa* 7.

¹³¹ Chapter 2 of the Brundtland Report, 1987.

¹³² The United Nations Conference on the Human Environment held in Stockholm in 1972. Hereafter referred to as the *Stockholm Declaration*.

¹³³ Article 8 of the *Stockholm Declaration*.

concept of sustainable development was formally adopted at Rio de Janeiro in 1992.¹³⁴

The 1992 Rio Earth Summit reaffirmed and amended the Stockholm Declaration.¹³⁵ Principles similar to those adopted at Stockholm, were also adopted at this summit, which held that the right to development must be exercised in a manner that will meet the equitable developmental and environmental needs of the current generation without compromising the needs of future generations¹³⁶ and further emphasised that environmental protection must be a crucial component of the development process and shall not be considered in isolation of development in order to attain sustainable development.¹³⁷ Be that as it may, the needs of human beings must still be placed at the forefront of sustainable development, and as such, they are entitled to a life that is healthy and conducive.¹³⁸ The concept of sustainable development afterward gradually began to dominate regular policy discussions, but it was only after 1994 that South Africa adopted a strategy to advance global environmental and sustainable development goals on a national scale.¹³⁹

In the South African context, the concept of sustainable development is firmly entrenched in section 24(b)(iii) of the Constitution. In terms of this provision, everyone has the right to have their “environment protected through reasonable legislation and other measures that” essentially prohibits “pollution and degradation of the environment for the benefit of present and future generations in” order to foster conservation, safeguard “secure ecologically sustainable development,” and use of natural resources whilst promoting justifiable socio-economic development.¹⁴⁰

¹³⁴ United Nations 'Report on the World Commission on Environment and Development: Our Common Future' 1987. Hereafter referred to as the Brundtland Report 1987.

¹³⁵ United Nations Conference on the Environment and Development was held from 3 to 14 June 1992. This conference led to the adoption of the Rio Declaration on Environment and Development. Hereafter referred to as the *Rio Declaration*, 1992.

¹³⁶ Principle 3 of the *Rio Declaration*, 1992.

¹³⁷ Principle 4 of the *Rio Declaration*, 1992.

¹³⁸ Principle 1 of the *Rio Declaration*, 1992.

¹³⁹ National Strategy for Sustainable Development and Action Plan (NSSD 1) of 2011; Also see Coetzee *Sustainable development in South Africa* 12.

¹⁴⁰ Section 24 of the Constitution.

The concept of sustainable development in terms of the Constitution will be discussed in detail in the next chapter.

NEMA defines sustainable development as considering economic, environmental and social factors when implementing, planning and making decisions to ensure that such developments benefit not only the current generation but also the future generations.¹⁴¹ The concept of sustainable development is enshrined in section 2(2) of the NEMA, which provides that environmental management must give preference to the people and place at the forefront of its concerns their needs to equitably serve their cultural, developmental, “physical, psychological and social interests.”¹⁴² Moreover, the legislation entails that development should be conducted in a manner that is “socially, environmentally and economically sustainable” in order to benefit the present and future generations.¹⁴³

Accordingly, this concept requires development to consider all the relevant factors, such as avoiding or reducing environmental degradation and ensuring that development, extraction and use of renewable resources do not exceed or jeopardise the integrity of the environment.¹⁴⁴ NEMA took an anthropocentric approach when it comes to sustainable development, in that the needs of the people will always get first preference.¹⁴⁵ The principle of anthropocentrism places an obligation on the state to consider, when making environmental decisions, the effects of the decision on the people and their interests.¹⁴⁶

When balancing the different elements of sustainable development, the state has a legal obligation to ensure that developments that advance economic growth are

¹⁴¹ Section 1 of NEMA.

¹⁴² Section 2(4) of NEMA.

¹⁴³ Preamble of NEMA.

¹⁴⁴ Section 2(4) of NEMA. All the factors under this provision are aimed at giving effect to sustainable development.

¹⁴⁵ Oosthuizen, van der Linde and Basson “National Environmental Management Act 107 of 1998” 138. Also see Kotzé 2019 *Journal of Human Rights and the Environment* 62 – 85; Kotzé and Kim 2022 *Global Policy*.

¹⁴⁶ Blackmore 2015 *SAJELP* 11. See Kotzé *et al* 2022 *Earth System Governance* for a detailed discussion of this principle. Also see Kotzé *Global environmental constitutionalism in the Anthropocene*.

weighed against their social and environmental impacts.¹⁴⁷ Environmental considerations such as air quality management must be integrated into development and implementation plans that relate to energy, transportation and land use, amongst others.¹⁴⁸ In relation to air pollution this concept will therefore demand that economic-driven development must take into consideration how such a development is going to affect the quality of air where development is taking place or the area in the vicinity where the development is taking place, as well as on people's "physical, psychological, cultural and social interests".¹⁴⁹

This highlights the connection between the environment and the economy on the one hand and the economy and society on the other. Because of this, "sustainable development is concerned not only with environmental protection but also with broader issues of social development and cultural advancement."¹⁵⁰ This presents a challenge to the government due to the lack of a suitable manner of managing air quality without damaging the society or the economy.¹⁵¹ To counter this problem, NEMAQA mandates the government to prevent air pollution, and improve and sustain air quality, not at the expense of socio-economic development, but in correlation with it.

The objective of NEMAQA is to uphold environmentally sustainable development whilst encouraging justifiable social and economic development. This can be done by using reasonable measures that protect and enhance the quality of air in the country. In general, the purpose of this Act is to give effect to the purpose of section 24(b) of the Constitution and enhance the quality of ambient air for the purpose of ensuring "an environment that is not harmful to health and well-being".¹⁵²

¹⁴⁷ Oosthuizen, van der Linde and Basson "National Environmental Management Act 107 of 1998" 139.

¹⁴⁸ DEFF Air quality and sustainable development 7.

¹⁴⁹ Section 2(4) of *NEMA*.

¹⁵⁰ Feris 2010 *PER* 10.

¹⁵¹ DEFF Air quality and sustainable development 7.

¹⁵² Section 2 of NEMAQA.

2.6 Conclusion

This chapter provided a brief historical background on environmental rights and how legislation throughout the years attempted to regulate air quality in South Africa. Furthermore, the chapter discussed the current measures used to regulate air quality in South Africa. Additionally, the chapter discussed the current state of air quality in South Africa given the current mechanisms put in place to regulate air quality and the implications of the current state of air quality. The chapter concludes by discussing the concept of sustainable development in the context of regulating air quality and how it balances social, economic, and environmental considerations. The next chapter discusses environmental rights in terms of the Constitution and how they find application in relation to air quality, and case law.

Chapter 3: Section 24 of the Constitution

3.1 Introduction

The South African legislation is guided by the Constitution, which establishes the notion of constitutional supremacy.¹⁵³ Chapter 2 of the Constitution outlines the fundamental rights as well as the state's obligations to provide for those rights. This chapter only focuses on the environmental right. This chapter also discusses how the judiciary, and scholars interpret the environmental right in terms of the Constitution as well as in relation to air quality protection. The subsequent paragraph will discuss the environmental right in terms of section 24 of the Constitution.

3.2 Environmental right in terms of the Constitution

Section 24 of the Constitution provides that everyone has a right to an environment that is not detrimental to "their health and well-being" and to have that environment protected "through reasonable legislation and other measures that" prohibits pollution and environmental degradation, for the benefit of present and future generations, whilst safeguarding and promoting conservation, ecologically sustainable development, and use natural resources that encourages justifiable social and economic development.¹⁵⁴ Feris¹⁵⁵ contends that section 24 of the Constitution embodies global concerns regarding an increase in the deterioration of the quality and integrity of the environment and the implications of that unrelenting deterioration on South Africa's current and future generations.

In terms of the Constitution, the environmental right is divided into two categories: the protection of health and well-being in terms of section 24(a) and ecologically sustainable development in section 24(b). The following paragraph deals with section 24(a) of the Constitution.

¹⁵³ Section 2 of the *Constitution*.

¹⁵⁴ Section 24 of the *Constitution*.

¹⁵⁵ Feris "Environmental rights protected in the Constitution of the Republic of South Africa" 219.

3.2.1 Section 24(a)

Section 24(a) of the Constitution contains an uncontested nexus linking the environment, human health, and well-being.¹⁵⁶ The definition of the “environment” has an extended meaning; it not only limits the definition to the surroundings within which humans exist but also finds application in the atmosphere, the land and water and biodiversity in general.¹⁵⁷ This definition is broad and inclusive encompassing “both green (biophysical) and brown (social) dimensions.”¹⁵⁸ The concept of environment from a green perspective includes living elements of the ecosystem, such as animals, plants and humans, as well as the biogeochemical recycling process of matters within a closed system. In the case of *BP Southern Africa v MEC for Agriculture and Others*¹⁵⁹ “the court defined environment as all conditions and influences affecting the life and habits of man” referring to the definition in the *Environment Conservation Act 73* of 1989, NEMA’s predecessor.¹⁶⁰ From a green perspective, the environment acknowledges crucial issues such as preventing pollution (including air pollution) and damage to the environment, conservation of endangered species and ecosystems and sustainable use and management of natural resources.¹⁶¹

While the meaning of green perspectives may be more clearly articulated, the brown perspectives must be understood as expressing both the physical and social aspects of the environment within which people exist.¹⁶² This perspective incorporates social issues into the environmental sustainability plans and addresses the vulnerabilities of marginalised communities in case of disaster.¹⁶³ This includes developing resilient

¹⁵⁶ Du Plessis 2018 *SAJHR* 193. Du Plessis argues that it is because both human health and well-being rely on the quality of the environment for their welfare.

¹⁵⁷ Section 1 of NEMA.

¹⁵⁸ Du Plessis and Nel “An introduction” 12.

¹⁵⁹ *BP Southern Africa (Pty) Limited v MEC for Agriculture, Conservation, Environment & Land Affairs* (03/16337) [2004] ZAGPHC 18 (31 March 2004).

¹⁶⁰ Section 1 of the *Environment Conservation Act 73* of 1989. Also see Van der Linde and Basson “Environment” 13.

¹⁶¹ Nel and Alberts “Environmental Management and Environmental Law in South Africa: An Introduction” 6.

¹⁶² Du Plessis and Nel “An introduction” 12.

¹⁶³ Nel and Alberts “Environmental Management and Environmental Law in South Africa: An Introduction” 6.

communities and implementing plans to avoid, adapt, manage and recover from climate-related disasters.¹⁶⁴ Du Plessis¹⁶⁵ posits that the “environment” should be broadly understood to include socio-economic and cultural aspects of the interaction between people and the natural environment. Accordingly, it is argued that human health and well-being form a fundamental and inseparable part of the earth system, and thus brown perspectives, or social issues cannot be isolated from the “green” environment.¹⁶⁶

The first aspect of section 24(a) of the Constitution implies that everyone whose health has been detrimentally affected by a polluted environment may approach a court for relief in terms of section 24 of the Constitution.¹⁶⁷ In essence, the right to have an environment that is not harmful to your health creates an interrelation between a person’s health and the condition of the environment in which they reside. This is because health is considered an inarguable component of environmental concerns; hence, it falls under the scope of section 24 of the Constitution.¹⁶⁸ The second aspect of section 24(a) furthers the right beyond health and entails that everyone has the right to an environment that is beneficial to their well-being.¹⁶⁹ The concept of well-being is not defined and thus not readily determinable. This is because the state of “well-being” is experienced and understood differently depending on the context.¹⁷⁰

This concept is argued to have a spiritual or psychological connotation that includes the aesthetic, cultural, or religious values that an environment provides for the people, however the courts have been hesitant to accept such a broad interpretation.¹⁷¹ There have been attempts to define the concept of “well-being”;

¹⁶⁴ Nel and Alberts “Environmental Management and Environmental Law in South Africa: An Introduction” 7.

¹⁶⁵ Du Plessis 2008 *SAJELP* 63; Donald interpretation of key concepts in environmental right in section 24 58.

¹⁶⁶ Du Plessis 2015 *PER* 1849; Nel and Alberts “Environmental Management and Environmental Law in South Africa: An Introduction” 6.

¹⁶⁷ *Verstappen v Port Edward Town Board and Others* 1994 (3) SA 569 (D).

¹⁶⁸ Glazewski *Environmental Law in South Africa* 15-16.

¹⁶⁹ Section 24(a) of the *Constitution*.

¹⁷⁰ Du Plessis 2018 *SAJHR* 3.

¹⁷¹ Du Plessis 2018 *SAJHR* 9.

from these efforts, a number of understandings were established and an inference of what constitutes “well-being” could be drawn. Du Plessis¹⁷² argues that the concept of “well-being”, as envisioned in section 24(a) of the Constitution refers to people’s welfare and their ability to be content and at peace. This suggests that the environment in which people reside, and work must be a safe environment that protects their human comfort and their environmental interests, such as heritage and religious resources.

Du Plessis’s interpretation of the concept of ‘well-being’ is consistent with that of other scholars,¹⁷³ as she argues that a person’s knowledge or reasonable expectation of a threat to the environment anywhere may impact their well-being.¹⁷⁴ Essentially, the argument is that well-being relates to instances in which environmental interests that do not have evident health implications are harmed, meaning that when environmental degradation has no direct health implications on people, such degradation of the natural environment will be linked to their well-being.¹⁷⁵ The court in *Hichange Investments v Cape Produce*,¹⁷⁶ held that an environment that is contaminated with stench will constitute an infringement to one’s rights to have an environment that is not harmful to their “well-being”, even if such a stench does not have detrimental health impacts.¹⁷⁷ In relation to air quality, this implies that air pollution in an environment where a person resides or works may constitute an infringement on their right to an environment that is not harmful to their well-being, even if the pollutant in question does not pose any health threat.

This means that air pollution that interferes with people’s ability to exercise their social, cultural, and religious rights, may be deemed to violate the right to an environment that is not detrimental to their well-being. This approach was

¹⁷² Du Plessis 2018 *SAJHR* 9-10.

¹⁷³ Scholars such as Ruggeri, Garcia-Garzon and Maguire *et al*/describes “well-being” as balance of feeling good and functioning well and overall, experiencing positive emotions. See Ruggeri *et al* 2020 *BMC Health and Quality of Life Outcomes* for a detailed discussion.

¹⁷⁴ Kidd *Environmental Law* 23; Du Plessis 2018 *SAJHR* 9.

¹⁷⁵ Donald *interpretation of key concepts in environmental right in section 24* 81; Du Plessis 2018 *SAJHR* 8.

¹⁷⁶ *Hichange Investments (Pty) Ltd v Cape Produce Co (Pty) Ltd t/a Pelts Products* 2004 (2) SA 393 (E).

¹⁷⁷ Para 34.

confirmed in the case of *Oudekraal Estate (Pty) Ltd v City of Cape Town*.¹⁷⁸ The case concerned a portion of land in Cape Town that had “cultural and religious significance” to the Muslim community due to its historical importance”.¹⁷⁹ The court in its judgement held that the portion of land in question “contributed to the spiritual, cultural, and social well-being of the Muslim community” and thus the destruction of cramats will have an adverse impact on their right to well-being.¹⁸⁰ This case demonstrates that environmental harm that has an impact on cultural and religious interests infringes on the right to an environment that is not harmful to your well-being.

Moreover, in the case of *HTF Developers (Pty) Ltd v Minister of Environmental Affairs and Tourism*,¹⁸¹ the court held that the environmental right does not only protect activities that may harm human health but also has to give effect on sustainable development to ensure that the environment is beneficial to well-being.¹⁸² The case of *Wildlife Society of Southern Africa & Others v Minister of Environmental Affairs and Tourism*,¹⁸³ illustrates a situation concerning the interpretation of well-being rather than health. The case concerns a decision to grant private individuals occupational rights to occupy a conservation area located on the Wild Coast. When the new occupants caused extensive ecological degradation to the conservation area, the applicants argued that the government was failing to enforce its obligation to promote conservation and sustainable ecosystem, thus infringing on their right to an environment that is not harmful to their well-being. The court, in its judgment, ordered the respondent to take

¹⁷⁸ *Oudekraal Estate (Pty) Ltd v City of Cape Town and others* 2004 6 SA 222 (SCA).

¹⁷⁹ Para 14.

¹⁸⁰ This was also confirmed when the matter was taken on review see *Oudekraal Estate (Pty) Ltd v City of Cape Town and others* (25/08) [2009] ZASCA 85 (3 September 2009).

¹⁸¹ *HTF Developers (Pty) Ltd v Minister of Environmental Affairs and Tourism and others* 2006 5 SA 512 (T).

¹⁸² Para 18.

¹⁸³ *Wildlife Society of Southern Africa & Others v Minister of Environmental Affairs and Tourism of the Republic of South Africa* 1996 (3) SA 1095 (Tk).

necessary measures to enforce the promotion of conservation and sustainable ecosystem.¹⁸⁴

The court in *Trustees for the time being of Groundwork Trust and Another v Minister of Environmental Affairs and Others*,¹⁸⁵ in its application of section 24(a) of the Constitution held that the failure to bring air pollution levels into compliance is “not consistent” with the right to an environment that is not harmful to health and wellbeing and infringes on other constitutional rights.¹⁸⁶ Furthermore, the court held that the wording of section 24(a) makes the provision unqualified, meaning that the right must be “understood to be immediately realisable.”¹⁸⁷ Kidd argues that the court’s interpretation is incorrect, as the majority of activities that have a detrimental impact on the health and the environment also have social and economic benefits, which means that immediately realising this right would be factually unrealistic and unqualified with “adverse consequences” on the economy, health and wellbeing.¹⁸⁸ The case is discussed in more detail in the subsequent chapter below.¹⁸⁹

3.2.2 Section 24(b)

Section 24(b) of the Constitution provides that:

everyone has the right to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that

- i. prevent pollution and ecological degradation;
- ii. promote conservation; and
- iii. secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.

The first two aspects of section 24(b) require very little discussion because they are self-explanatory. Section 24(b) imposes a positive obligation on the government to protect the environment from pollution and ecological degradation “through reasonable legislative and other measures” for the benefit of the present and future

¹⁸⁴ *Wildlife Society of Southern Africa & Others v Minister of Environmental Affairs and Tourism of the Republic of South Africa* 1996 (3) SA 1095 (TK) 478.

¹⁸⁵ *Trustees for the time being of Groundwork Trust and Another v Minister of Environmental Affairs and Others* (39724/2019) [2022] ZAGPPHC 208 (18 March 2022)

¹⁸⁶ Para 76 & 155.

¹⁸⁷ Para 156 & 163.

¹⁸⁸ Kidd 2023 (26) *PER* 16.

¹⁸⁹ See para 4.5.1 for a detailed discussion of the case.

generations.¹⁹⁰ This aspect implies that the government must guard against any process or event that might negatively impact the ecosystem or any activities that have the potential to reduce the worth, strength or quality of the ecosystem. The second aspect requires the government to implement “legislative and other measures” that positively enhance the ecosystem by protecting, preserving, and carefully managing the environment and the ecosystem. The last aspect of section 24(b) contains a concept known as “ecologically sustainable development”.¹⁹¹ This concept mandates the government “to take reasonable legislative and other measures to secure ecological sustainable development” while promoting justifiable economic and social development.¹⁹² Kidd contends that this provision functions as an “internal modifier” which qualifies how “the right to an environment that is not harmful to health and well-being” must be accomplished “through reasonable legislative and other measures”.¹⁹³

The wording of section 24(b) suggests that legislation alone will not be enough to protect the environment; such legislation must be supplemented with reasonable and “well-directed policies and programmes”.¹⁹⁴ These measures must be taken for the purposes of “preventing pollution and ecological degradation, promoting conservation, and securing ecological sustainable development”.¹⁹⁵ Kidd argues that “prevention of pollution” in the context of air pollution would require shutting down all activities and industries that contribute to air pollution, which is not economically feasible. As a result of this “prevention”, pollution should be interpreted as the “minimisation” of pollution.¹⁹⁶ This interpretation is in accordance with other scholars. Wolf and Stanley submit that the main purpose of “environmental law is not to eliminate pollution” but rather to balance the polluting emissions from

¹⁹⁰ Muir *interpretation of Environmental right* 60.

¹⁹¹ Donald *interpretation of key concepts in environmental right in section 24* 114. See Soyapi *The role of the judiciary in advancing the right to a healthy environment: eastern and southern African perspectives*; Chikuruwo *sustainable development as a constitutional value: South African perspectives*.

¹⁹² Section 24(b)(iii) of the *Constitution*.

¹⁹³ Kidd 2023 (26) *PER* 17.

¹⁹⁴ *Government of the Republic of South Africa v Grootboom* 2001 (1) SA 46 (CC) para 42; Kidd *Environmental Law* 23.

¹⁹⁵ Section 24(b) of the *Constitution*; Kidd *Environmental Law* 23.

¹⁹⁶ Kidd 2023 (26) *PER* 8.

economic activities with the needs of the community for an enduring healthy environment.¹⁹⁷

In the case of *Trustees for the time being of Groundwork Trust and Another v Minister of Environmental Affairs and Others*,¹⁹⁸ the court held that the unacceptably high concentration of air pollutants in the Highveld Priority Area had detrimental health implications and were thus infringing on the right to an environment that is not harmful to health and well-being of those people residing in the area.¹⁹⁹ In terms of section 24(b) of the Constitution “prevention of pollution” in the context of air pollution would require Eskom as a cause of the toxic air pollution in the area through electricity generation to cease operating electricity-generating power stations; this may likely result in adverse implications not only on the economy, but also on the health and well-being of the people.²⁰⁰ Social and economic benefits accompany electricity generation, therefore the concept of sustainable development imposes the need to balance socio-economic consideration with environmental concerns.

However, if one understands “prevention” of pollution to be interpreted as “minimisation” of pollution, as Kidd argues, this will require Eskom as a cause of toxic air pollution through electricity generation as per the facts in the case of *Trustees Groundwork* to minimise the pollution emitted on Highveld Priority Area rather than closure of electricity generating power stations. Consequently, Eskom through its electricity generating mechanism, would be required to find and explore other measures that would allow it to continue generating electricity whilst emitting less polluting emissions that are enduring to the environment, health, and well-being of the people in the area.

The environment must be protected not only for the benefit of environmental conservation, but also for “the benefit of present and future generations”. In the

¹⁹⁷ Wolf and Stanley *Wolf and Stanley on Environmental Law* 5.

¹⁹⁸ *Trustees for the time being of Groundwork Trust and Another v Minister of Environmental Affairs and Others* (39724/2019) [2022] ZAGPPHC 208 (18 March 2022).

¹⁹⁹ Para 33 & 241.1.

²⁰⁰ Kidd 2023 (26) *PER* 16.

case of *BP Southern Africa (Pty) Ltd v MEC for Agriculture, Conservation, Environment and Land Affairs*,²⁰¹ the court emphasised the importance of balancing “environmental interests” with “justifiable socio-economic development” well beyond the interests of the present living generation. This is in line with the intergenerational equity which provides that “as members of the present generation, we hold the earth in trust for future generations”.²⁰² As noted in Chapter 2 future generations should have the same access to and experience of natural resources as the present generation.²⁰³

In terms of the concept of sustainable development, any developments undertaken by the state must consider environmental, economic and social factors of such development when implementing, planning and making decisions in order to ensure that the development not only benefits the current but also the future generation.²⁰⁴ The right necessitates that the need for economic and social development must not be merely considered, but also be promoted when environmental protection measures are implemented. These developments must consider all relevant factors such as ensuring that a risk-averse and cautious approach is followed and consider the limited available information about the consequences of the decision, amongst others.²⁰⁵

Sustainable development in terms of the Constitution should not be understood as suggesting prioritisation of environmental protection over socio-economic development, but rather the interpretation must be consistent with the comprehensive approach of sustainable development in terms of section 1 of NEMA, which states that developmental needs of current and future generations must guide sustainable development.²⁰⁶

²⁰¹ *BP Southern Africa (Pty) Ltd v MEC for Agriculture, Conservation, Environment and Land Affairs* 2004 5 SA 124 (W).

²⁰² Kidd *Environmental Law* 24.

²⁰³ Van der Linde and Basson “Environment” 19.

²⁰⁴ Section 1 of NEMA; para 143C-E.

²⁰⁵ Nel and Alberts “Environmental Management and Environmental Law in South Africa: An introduction” 8.

²⁰⁶ Coetzee *Sustainable development* 21-22.

There are few cases that extensively deal with the concept of sustainable development in South African jurisprudence and one of those cases is the *Fuel Retailers Association v Director General: Environmental Management*.²⁰⁷ The case concerns failure by environmental authorities to consider the socio-economic impacts of the development of a filling station.²⁰⁸ Ngcobo J held that development cannot be supported on a deteriorating environment²⁰⁹ and furthermore that unlimited development is harmful to the environment and thus environmental degradation is harmful to development; it is for this reason that a balance must be struck between environmental considerations and socio-economic considerations.²¹⁰ The court, in its judgement, held that the environmental authorities erred in granting an authorisation for the development of a petrol station without considering the impacts of such a development on "socio-economic considerations" and remitted to consider them in their decision making.²¹¹ In the minority judgements, Sachs J stated that socio-economic considerations should only be taken into account if the environment is to be harmed.²¹²

In the case of *Earthlife Africa Johannesburg v Minister of Environmental Affairs*,²¹³ the court determined the implications of the decision to construct a coal-fired power station on the environment. This case explores the statutory duty of the government to protect natural resources in order to ensure that the resources are available for future generations.²¹⁴ Therefore, the government must guard against the exploitation of natural resources. Consequently, the court confirmed the government's obligation to take reasonable measures concerning climate mitigation and adaptation, and that careful consideration must be placed on climate change

²⁰⁷ *Fuel Retailers Association of Southern Africa v Director General: Environmental Management, Department of Agriculture, Conservation and Environment, Mpumalanga Province* 2007 (6) SA 4 (CC).

²⁰⁸ Para 5.

²⁰⁹ Para 44.

²¹⁰ Para 44-45.

²¹¹ Para 97, 105 & 106.

²¹² Para 113. Also see Tladi 2004 *South African Journal of Environmental Law and Policy* 17-29; Feris 2010 *PER* 72-99; Du Plessis and Feris 2008 *South African Journal of Environmental Law and Policy* 157-168.

²¹³ *Earthlife Africa Johannesburg v Minister of Environmental Affairs* 2017 (2) All SA 519 (GP).

²¹⁴ Para 82-86.

impact assessment before awarding an environmental authorisation for the construction of coal fired power station.²¹⁵ In this case it was held that environmental protection for present and future generations outweighs the need for socio-economic development.²¹⁶ The implications of this judgment in the context of air quality imply that the government has an obligation to protect the air quality as a natural resource, not only for the present generation but also for future generations, through the limitation of its exploration.

3.3 Conclusion

This chapter discussed section 24 of the Constitution and the implications of this provision in relation to air quality in South Africa. Additionally, the chapter explored how the judiciary applies the provisions of the environmental right and interprets certain concepts enshrined in section 24 of the Constitution. The cases referred to above highlight the importance of the duty played by the government in ensuring that people have an environment that is not harmful to their health and well-being “through reasonable legislative and other measures” that prevent or minimise air pollution in order to preserve good air quality for the present and future generations. Consequently, section 24 of the Constitution should be interpreted as calling for measures and legislations that promote minimisation of activities that significantly contribute to air pollution and exploitation of natural resources for the benefit of the current and future generation rather than shutting down such activities.

²¹⁵ Para 82.

²¹⁶ Para 98-100.

Chapter 4: Emission Standards and case studies

4.1 Introduction

The previous chapter analysed how section 24 of the Constitution protects human health and well-being from harmful air quality. This chapter aims to discuss air quality regulation through minimum emission standards in terms of the NEMAQA, the practical application of postponement of non-compliance with such minimum emission standards and whether this constitutes a breach of section 24 of the Constitution. The chapter also discusses how the courts addressed issues caused by non-compliance to minimum emission standards and the implications of such non-compliance. Firstly, the regulatory framework for air quality management in terms of NEMAQA will be discussed.

4.2 Regulatory framework for air quality management in terms of NEMAQA

The NEMAQA establishes a regulatory framework for managing air quality in order to protect the environment.²¹⁷ The Act aims to give effect to section 24(b) of the Constitution, improve the ambient air quality, and bring about an "environment that is not harmful to the health and well-being."²¹⁸ The Act provides various instruments to accomplish this, namely through managed industrial emissions such as source control, declaration of priority areas, and the setting of minimum emissions standards.²¹⁹ The study focuses on the following air regulatory measures; the NAAQS, controlled emitters, the declaration of priority areas, and the minimum emission standards.

The NAAQS refers to allowable air pollution concentrations that are emitted during a certain period and is informed by the health impacts caused by the pollutants.²²⁰ The NAAQS sets different concentration limits for different criteria of air pollutants

²¹⁷ Section 2(a) of NEMAQA; also see GN 1144 in GG 41996 of 26 October 2018.

²¹⁸ Section 2(b) of NEMAQA.

²¹⁹ Chapter 4 Part 3 of NEMAQA.

²²⁰ GN 1210 in GG 32816 of 24 December 2009; also see Hamilton and Requate 2012 *JEEM* 1.

at different times, ranging from daily to annual maximum concentration levels.²²¹ The National Ambient Air Quality Standards (NAAQS) provides for different substances or mixture of substances.²²²

The national and provincial emission standards set the “permissible amount or concentration of any substance or mixture of substance in ambient air” that poses or may potentially pose “a threat to health, well-being, or the environment”.²²³ The Minister must determine the method that must be used to measure the ambient air quality, the manner in which such measurements must be reported, and to whom.²²⁴

The Minister may declare various activities and appliances as controlled emitters due to their atmospheric emissions that pose or may potentially pose a threat to health and the environment.²²⁵ The Minister of Forestry, Fisheries and Environment or a Member of the Executive Council of a province (MEC) must establish emission standards that indicate the “permissible amount, volume, emission rate or concentration of any specified substance or mixture of substances that may be emitted from the controlled emitter.”²²⁶ He or she must further prescribe the manner in which the measurements for such emissions will be carried out.²²⁷ Such a declaration implies that anyone conducting any activity or operating any appliance declared as a controlled emitter must comply with the national or provincial emission standards.²²⁸

The Minister or the MEC may if he or she “reasonably believes” that the area requires specific air quality management action to address the negative air quality impact in an area that disturbs national interest or may potentially lead to air pollution in

²²¹ Hamilton and Requate 2012 *JEEM* 1.

²²² The National Ambient Air Quality Standards are published in GN 1210 in GG 32816 of 24 December 2009.

²²³ Section 9(1) and 10(1) of NEMAQA.

²²⁴ Section 12 of NEMAQA.

²²⁵ The only person authorised to declare by notice the activity or appliance as a controlled emitter in terms of section 23(1) of NEMAQA is the Minister or the MEC.

²²⁶ Section 21(3) of NEMAQA.

²²⁷ Section 21(3)(a)(ii) of NEMAQA.

²²⁸ Section 25 of NEMAQA.

another country or province, declare such an area as a priority area.²²⁹ The ambient air quality standards may be exceeded in that area.²³⁰ If an area is declared a priority area,²³¹ the National Air Quality Officer has an obligation to prepare an Air Quality Management Plan (AQMP) within six months after such declaration and submit the plan for approval by the Minister.²³² He must consult the air quality officers of the specific areas for their input.²³³ The National Air Quality Officer must follow a public participation process as described in the Act.²³⁴

The AQMP must focus on the co-ordination of air quality management for that area, resolve issues that relate to air quality and provide support for the implementation of the AQMP by a committee that represents the different role-players.²³⁵ The Minister must publish the approved AQMP within 90 days from the date of the approval and the plan must come into effect from the date of such publication.²³⁶ In addition, the Minister may prescribe regulations that are necessary for implementing and enforcing the approved AQMP for the declared priority area, including the frequent review of the AQMPs, fines for any contravention or failure to comply with the AQMP, and measures to facilitate compliance with the AQMPs.²³⁷

The next paragraph discusses minimum emission standards in more detail and indicates their contribution to the regulation of air pollution.

4.3 Minimum emission standards

The Minister or the MEC may publish a list of activities in the *Government Gazette* that triggers an application for a provisional or an atmospheric emission licence.²³⁸

²²⁹ See for example Vaal triangle Airshed Priority Area GN 365 in GG 28732 of 21 April 2006; Highveld Priority Area GN 1123 in GG 30518 of 23 November 2007; Waterberg/Bojanala Priority Area GN 659 in GG 3361 of 30 September 2011.

²³⁰ Section 18(1)(2) of NEMAQA. Declaration of such an area must be published in the Government Gazette see GN 1123 in GG 30518 of 23 November 2007 the Highveld Priority Area for example.

²³¹ In terms of section 18 of the NEMAQA.

²³² Section 19(1)-(2) of NEMAQA. Similarly, a MEC of a province or MECs of different provinces may declare such areas – section 19(3)-(4).

²³³ Section 19(2)(a) of NEMAQA.

²³⁴ Sections 56 and 57 read with section 19(4) of NEMAQA.

²³⁵ Section 19(6) of NEMAQA.

²³⁶ Section 5 of NEMAQA.

²³⁷ Section 20 of NEMAQA.

²³⁸ Sections 21-22, read with GN R551 in GG 38863 of 12 June 2015 as amended.

The Minister of Forestry, Fisheries and Environment did so and identified activities that may detrimentally impact people's health, environment and socio-economic conditions.²³⁹ The list also establishes minimum emission standards in relation to the substance or mixture of substances as referred to in the Government Notice.²⁴⁰ The holders of provisional or emission licences must comply with the standards; non-compliance is an offence.²⁴¹

The term minimum emission standard refers to a "permissible amount, volume, emission rate or concentration of a substance or mixture of substance" that result from one of the listed and identified activities in the Government Notice, as well as how such emissions must be measured.²⁴² Essentially, emission standards prescribe the maximum rate or concentration of a certain pollutant that may be legally released into the atmosphere from a single pollutant source or put differently, specify the permissible rate into the atmosphere. These standards are determined based on what the Minister or MEC "reasonably believes" can be dispersed into the atmosphere without causing danger to the environment, the health of the public, social and economic conditions, or ecological conditions, amongst others.²⁴³ Different limits exist for various substances or mixture of substances such as carbon monoxide, particulates, sulphur dioxide, nitrogen dioxide, and ozone.²⁴⁴

Compliance with the minimum emission standards is measured in a manner that is consistent with the method recognised and approved by the National Air Quality Authority as listed in Annexure A of the *Listed Activities and Associated Minimum Emission Standards Identified in terms of section 21(3) of NEMAQA* or any other

²³⁹ Section 21 (1) of NEMAQA.

²⁴⁰ Section 21(2) of NEMAQA; See also GN 551 in GG 38863 of 12 June 2015 as amended.

²⁴¹ Section 22 of NEMAQA. If unlawful activities commenced, the applicant may apply for rectification in terms of section 24G of the NEMA. It also constitutes an offence in terms section 49A(1)(a) of NEMA and if convicted, the person will be liable to pay a fine of not more than R5 million or to imprisonment of 5 years and for a second offence the penalty is R10 million- or 10-years imprisonment in terms of section 49B of NEMAQA. On section 24G see Hall 2022 *PER*; Rantlo *Ex post facto environmental authorisation in South Africa*.

²⁴² Section 21(3) of NEMAQA.

²⁴³ Section 21(1) of NEMAQA; McSpadden "Ambient air and water standards" 19.

²⁴⁴ GN 893 in GG 37054 of 22 November 2013.

alternative method consented to in writing by the relevant authority.²⁴⁵ The date on which compliance with the minimum emission standard is required is determined by the type of plant in question whether such a plant is new or existing.²⁴⁶ New plants were required to comply with the new plant minimum emission standards from 1 April 2010,²⁴⁷ while existing plants were required to comply from 1 April 2015.²⁴⁸ Existing plants had to comply by 1 April 2020.²⁴⁹ The National Air Quality Officer could specify other dates.²⁵⁰

Compliance with the minimum emission standards may be suspended or postponed to a later date specified by the National Air Quality Officer, but this is only applicable to existing plants.²⁵¹ The purpose of this postponement or non-compliance was to give the plant time to implement the necessary measures that will help with reducing emissions, and to bring them into compliance with the minimum emission standards. An application to the National Air Quality Officer may be made to postpone compliance with the minimum emission standards for a new plant, as stipulated in paragraph 10 of the Listing Notice.²⁵² This application for postponement may only be granted once, for a period of no more than five years from the date of issue and cannot be extended beyond 31 March 2025.²⁵³

The application for postponement or suspension of compliance must be accompanied by an atmospheric impact assessment report compiled by a competent person authorised to do so.²⁵⁴ The applicant must provide a detailed motivation for such an application and undertake a public participation process as prescribed.²⁵⁵ Furthermore, an application for postponement or suspension for an existing plant

²⁴⁵ Regulations 5 & 6 of Part 2 of GN 893 in GG 37054 of 22 November 2013 (hereafter GN 893 of 2013), as amended by GN 541 in GG 38863 of 12 June 2015; GN 1207 in GG 42013 of 31 October 2018; GN 687 in GG 42472 of 22 May 2019.

²⁴⁶ Regulations 8 – 10 of Part 2 of GN 893 of 2013.

²⁴⁷ Regulations 8 of Part 2 of GN 893 of 2013.

²⁴⁸ Regulations 9 of Part 2 of GN 893 of 2013.

²⁴⁹ Regulation 10 of Part 2 of GN 893 of 2013.

²⁵⁰ Regulation 8 - 10 of Part 2 of GN 893 of 2013.

²⁵¹ Regulation 11 of Part 2 of GN 893 of 2013.

²⁵² Regulation 11 of Part 2 of GN 893 of 2013.

²⁵³ Regulation 11A of Part 2 of GN 893 of 2013.

²⁵⁴ Also see section 30 of NEMAQA, read with GN 747 in GG 36904 of 11 October 2013.

²⁵⁵ Regulation 12 of Part 2 of GN 893 of 2013.

compliance with the minimum emission standard for a new plant may be made to the National Air Quality Officer only if the plant meets other pollution emission standards but is unable to meet those of that particular pollutant or pollutants.²⁵⁶

The application must demonstrate a prior reduction in emissions of that specific pollutant or pollutants, as well as actions and direct investments implemented to meet the minimum emission criteria for new plants.²⁵⁷ After consultation with the Licensing Authority, the National Air Quality Officer may grant the relevant application with or without conditions or refuse to grant such application and provide written reasons for such refusal.²⁵⁸ If there is sufficient compliance with the NAAQS in the area for the pollutant or pollutants applied for, or if the atmospheric impact report²⁵⁹ does not show significantly increased health risks in areas where the ambient air quality standards are not applicable, the “National Air Quality Officer after consultation with the Licensing authority may grant an alternative emission limit”.²⁶⁰

In 2019, Eskom submitted various postponement applications for the majority of its power stations. The National Air Quality Officer permitted Eskom to continue to operate its power stations without complying with the relevant minimum emission standards pending the final outcomes of the decision.²⁶¹ This included the 2020 Eskom application for suspension of compliance with the new plant’s minimum emission standards for Particular Matter (PM) and Nitrogen Oxide (NO) from 2020 until the decommissioning of the Port Rex station which is currently scheduled for 2026 (but not later than 2030) or an alternative emission limit for the pollutants mentioned above.²⁶²

²⁵⁶ Regulation 12A (a) of Part 2 of GN 893 of 2013.

²⁵⁷ Regulation 12A (b) of Part 2 of GN 893 of 2013.

²⁵⁸ Regulation 13 of Part 2 of GN 893 of 2013.

²⁵⁹ To be complied in terms of section 30 of NEMAQA.

²⁶⁰ Regulation 12A (c) of Part 2 of GN 893 of 2013.

²⁶¹ Eskom 2021 Sustainability Report 21.

²⁶² Eskom 2020 Application for suspension of the new plant minimum emission standards compliance timeframes for the port rex power station 5. Hereafter Eskom 2020 Application Report.

According to Eskom the reasons for this application were that the station does not operate to its full extent, the financial costs of compliance are very high, the emissions from this station would not result in non-compliance with the NAAQS, and the power plant's remaining life expectancy was short.²⁶³ In August 2021, Eskom appeared before a criminal court in relation to charges relating to several non-compliances with the PM emission standards leading to two contravention incidents. Other than that, and as far as can be ascertained, no other company has been sentenced for contravention of minimum emission standards.²⁶⁴

From time to time the National Air Quality Officer may review and on reasonable grounds revoke any application for postponement of compliance granted, should the ambient air quality conditions in the impacted area of the plant fail to meet the ambient air quality standards. They must consider submissions from both the affected plant and its surrounding communities.²⁶⁵ Instances that require continuous emission monitoring for listed activities under section 21 of NEMAQA must include the following:²⁶⁶

- (a) the averaging period for the purposes of compliance monitoring shall be expressed on a daily average basis or as prescribed in the Atmospheric Emission License;
- (b) the emission monitoring system must be maintained to yield a minimum of 80% valid hourly average values during the reporting period;
- (c) the emission monitoring system must be maintained and calibrated as per the original equipment manufacturers' specifications;
- (d) continuous emission monitoring systems must be audited by a SANAS accredited laboratory at least once every two (2) years.

Be that as it may, the compliance monitoring does not always adhere to these recommendations, and the monitored emission system do not always provide credible data that could be relied upon due to outdated and poorly maintained infrastructure.²⁶⁷ The next paragraph focuses on a recent case study that discusses

²⁶³ Eskom 2020 Application Report 9.

²⁶⁴ Eskom "Condensed Group Interim Financial Statements" 5.

²⁶⁵ Regulation 14 of GN 893 of 2013.

²⁶⁶ Regulation 15 of GN 893 of 2013.

²⁶⁷ See para 2.3 above.

the health impacts that are result from Eskom’s failure to comply with the prescribed minimum emissions standards.

4.4 Case examples

4.4.1 *Health impacts of Eskom’s non-compliance with the minimum emissions standards*

A 2023 research study conducted by the Centre for Research on Energy and Clean Air (CREA)²⁶⁸ evaluated the health impacts of Eskom, the authors of the report referred to it as the most polluting company of sulphur dioxide in the world.²⁶⁹ The study analysed the power stations’ monthly emission reports provided by Eskom for key air pollutants and “grouped emissions, air quality impacts and health and economic impacts of Eskom’s air pollution” and divided the outcomes into five compliance scenarios.²⁷⁰

The first scenario is the “compliance scenario”. This scenario assumes what the outcomes will be if Eskom complies with all the minimum emission standards by the year 2025.²⁷¹ The second one is “delayed compliance” and it assumes the implications if Eskom delays until 2030 to achieve compliance.²⁷² The next scenario is the “Eskom plan”, and it assumes what will happen if all the power stations, excluding Kusile and Medupi, operate until their end-of-life stage not complying with the minimum emission standards.²⁷³ The “Best Available Technology” scenario assumes what will happen if compliance is delayed until 2030, but the minimum emission standards are tightened to align with the best international standards.²⁷⁴ Lastly, the “no improvement” scenario assumes what will be the outcome if

²⁶⁸ Myllyvirta and Kelly “Healthy impacts of Eskom’s non-compliance with minimum emissions standards”. Hereafter referred to as “Health impacts of Eskom’s non-compliance”.

²⁶⁹ Myllyvirta “Eskom is now the world’s most polluting power company” 1.

²⁷⁰ Myllyvirta and Kelly “Health impacts of Eskom’s non-compliance” 16.

²⁷¹ Myllyvirta and Kelly “Health impacts of Eskom’s non-compliance” 4.

²⁷² Myllyvirta and Kelly “Health impacts of Eskom’s non-compliance” 4.

²⁷³ Myllyvirta and Kelly “Health impacts of Eskom’s non-compliance” 4.

²⁷⁴ Myllyvirta and Kelly “Health impacts of Eskom’s non-compliance” 4.

emissions from power plants remain unchanged from the 2021-2022 concentration level until the end of life for the power plants.²⁷⁵

The study found that in terms of the compliance scenario, should Eskom fully comply with all the minimum emission standards, it will lower SO₂ emissions by at least 60%, NO_x emissions by at least 20% and PM emissions by 50% compared to a no improvement scenario for emissions control technology.²⁷⁶ Consequently, health impacts will be reduced by half after 2025, avoiding a projected 1900 mortalities and of R33.3 billion in annual economic expenses.²⁷⁷ Furthermore, the study found that Eskom's retrofit plan in terms of the Eskom plan scenario would only result in all power plants attaining compliance with minimum emission standards by 2030, five years later than the scheduled deadline.²⁷⁸ This scenario will only lower SO₂ by 13%, NO_x by 11% and Hg by 3% when compared to the no-improvement scenario for emission control technology. The benefits of this scenario are "relatively modest" at best, due to a 15% reduction in annual health impacts in comparison to the no improvements scenario.²⁷⁹

Lastly, in the case of the "Best Available Technology" scenario, should Eskom implement the best available technology at all their available power stations, SO₂ would be reduced by 93%, PM by 78% and NO_x by 80%.²⁸⁰ This scenario projects more than 90% reduction in health impacts associated with emissions by 2031 by complying with minimum emission standards, avoiding about 1400 mortalities and R25 billion rand per annum in economic expenses.²⁸¹

This study demonstrates various mechanisms which polluters such as Eskom could use to ensure compliance with minimum emission standards that also have financial benefits. As a result, polluters have a plethora of options to take in order to attain compliance goals. However, it seems that the introduction of the best available

²⁷⁵ Myllyvirta and Kelly "Health impacts of Eskom's non-compliance" 17.

²⁷⁶ Myllyvirta and Kelly "Health impacts of Eskom's non-compliance" 4.

²⁷⁷ Myllyvirta and "Health impacts of Eskom's non-compliance" 10.

²⁷⁸ Myllyvirta and Kelly "Health impacts of Eskom's non-compliance" 4.

²⁷⁹ Myllyvirta and Kelly "Health impacts of Eskom's non-compliance" 10.

²⁸⁰ Myllyvirta and Kelly "Health impacts of Eskom's non-compliance" 4.

²⁸¹ Myllyvirta and Kelly "Health impacts of Eskom's non-compliance" 10.

technology (most probably at a cost) will be the best scenario to follow in the long-term.

4.5 Case Law

4.5.1 *The Trustees for Time Being of Groundwork Trust v The Minister of Environmental Affairs*

The 2022 case of *The Trustees for the time being of Groundwork Trust and Another v The Minister of Environment Affairs and Others*,²⁸² considers two main issues, the first one being whether the high levels of ambient air pollution constitute a breach of section 24(a) of the Constitution and secondly, whether section 20 of NEMAQA provides for a discretionary duty to issue implementation regulations to enforce the Highveld Air Quality Management Plan.²⁸³ In 2007, the former Minister of Environmental Affairs declared the Highveld Priority Area in terms of NEMAQA.²⁸⁴ This area consists of the highest number of polluted towns and cities in the Highveld area. The area comprises 12 coal-fired power plants, numerous coal mining operations and a coal to liquid fuel refinery.²⁸⁵ As a result of this, residents of these communities are not exposed to air quality that is “not harmful to their health and well-being.”²⁸⁶

Five years later after the declaration of the Highveld Priority Area an AQMP²⁸⁷ was published and its main purpose was to bring the ambient air pollution into compliance with the National Standards²⁸⁸ by 2020. The applicants argued that nine years after the implementation of the AQMP and years after the lapse of the 2020 deadline, none of the goals as per the plan have been realised.²⁸⁹ Essentially, the applicant’s argument rested on the failure to reduce air pollutants and bring the

²⁸² *The Trustees for the time being of Groundwork Trust and Another v The Minister of Environment Affairs and Others* (39724/2019) [2022] ZAGPPHC 208.

²⁸³ Para 11; GN 144 in GG 35072 of 2 March 2012.

²⁸⁴ Section 18 of NEMAQA read with GN 1123 in GG 30518 of 23 November 2007.

²⁸⁵ Para 17.

²⁸⁶ Para 18.

²⁸⁷ GN 144 in GG 35072 of 2 March 2012; para 19.

²⁸⁸ GN 1210 in GG 32816 of 24 December 2009.

²⁸⁹ Para 21.

priority area into compliance with the National Standards as per the AQMP and the Minister's failure to issue regulations that will reduce air pollution.²⁹⁰ The Minister's case, on the contrary rested on the basis that there is no breach of section 24(a) of the Constitution and secondly,²⁹¹ that the Minister has no obligation or statutory duty to issue regulations in terms of section 20 of the NEMAQA.²⁹²

The former Minister, in response to the applicant's argument argued that there are various measures for addressing air pollution, such as an Atmospheric Emission License²⁹³ and the AQMP.²⁹⁴ Therefore, the Minister is convinced that there are no compelling reasons for issuing regulations for the implementation of AQMPs as well as their enforcement.²⁹⁵ Furthermore, the former Minister argued that the task of addressing air pollution is not the national government's responsibility alone.²⁹⁶ Additionally, she argued that ambient air quality evidence gathered suggested that the air quality is improving in the Highveld Priority Area.²⁹⁷ The current Minister defends and abides by the argument advanced by the former Minister.²⁹⁸

The court in dealing with the first issue of whether the high levels of ambient air pollution constitute a breach of section 24(a) of the Constitution, held that the undisputed evidence before the court, as conceded by the Minister, is that the ambient air pollution concentration exceeds the national standards.²⁹⁹ The levels measured pose a threat to the environment, health and well-being of the people in the Highveld Priority Area.³⁰⁰ Furthermore, the evidence suggested that the high levels of ambient air pollution nine years after the establishment of the Highveld Plan showed no meaningful improvement.³⁰¹ It is for this reason that the court was convinced that there is indeed an infringement of section 24(a) of the Constitution

²⁹⁰ Para 23.

²⁹¹ Para 59.2.

²⁹² Para 26.

²⁹³ Section 22 read together with section 37 of NEMAQA; See para 4.2 above.

²⁹⁴ Para 59; Also see para 2.3 above.

²⁹⁵ Para 59.5.

²⁹⁶ Para 59.3.

²⁹⁷ Para 59.6.

²⁹⁸ Para 221.1.

²⁹⁹ Para 178.

³⁰⁰ Para 178.

³⁰¹ Para 180.

due to the Ministers' failure to promulgate the regulations for the Highveld Priority Area which have the potential to save lives.³⁰²

In dealing with the second issue of whether section 20 of the NEMAQA mandates the Minister to promulgate regulations to implement and enforce the Highveld AQMP, the court held that it is no longer necessary to make a determination on this issue because she has already initiated the process of drafting the regulations for the Highveld Priority Area.³⁰³ Be that as it may, the court held that section 20 of the NEMAQA read with section 7(2) of the Constitution, puts an obligation on the Minister to promulgate implementation and enforcement regulations.³⁰⁴

The court in its judgement, held that the claims that there is no breach of section 24(a) of the Constitution and no obligation to promulgate implementation regulations by the Minister are incorrect and warrant a declaratory order that will serve as guidance in the future.³⁰⁵ It declared that poor ambient air quality in the Highveld Priority Area infringes the constitutional right to an environment that is not detrimental to health and well-being as enshrined in section 24(a) of the Constitution.³⁰⁶ Furthermore, held that "the Minister of Environmental Affairs has a legal duty to prescribe regulations" in terms of section 20 of the NEMAQA in order to implement and enforce the Highveld AQMP.³⁰⁷ Consequently, it held that the Minister's delay in "preparing and initiating regulations to give effect to the Highveld AQMP" was unreasonable³⁰⁸ and that she must promulgate an implementation and enforcement regulation in terms of section 20 of the NEMAQA within 12 months of this order in order to implement and enforce the Highveld AQMP.³⁰⁹

³⁰² Para 179 & 183.

³⁰³ Para 197.

³⁰⁴ Para 216.

³⁰⁵ Para 232.

³⁰⁶ Para 241.1.

³⁰⁷ Para 241.2

³⁰⁸ Para 241.3

³⁰⁹ Para 241.4.

On 18 March 2022, the Minister took the matter on appeal,³¹⁰ and the grounds of appeal rested on the question of “whether the regulation-making power in section 20 of the AQA³¹¹ vested the applicant with a discretion to prescribe regulations or imposed a duty on her to do so.”³¹² The court held that there were reasonable prospects for the appeal to succeed and that the appeal raised an important constitutional issue that was of public interest.³¹³ The court upheld the appeal raised by the Minister responsible for environmental affairs, but the orders granted from paragraph 241.2 to 241.5 remained in place.³¹⁴

These cases are important for the purpose of this study because they address the research question of whether non-compliance with the minimum emission standards infringes on the environmental provision in the Constitution. In the first case, the court held that long-standing, unabated poor air quality constitutes a breach of the right to have an environment that is not harmful to one’s health and well-being.³¹⁵ This case sets a precedent by recognising air pollution as a gross violation of the environmental right.

4.5.2 Sawmilling South Africa v The Department of Environmental Affairs

In 2021, in the case of *Sawmilling South Africa v The Department of Environmental Affairs and Another*,³¹⁶ the court heard an application brought by the applicant to review environmental regulation GN R1207³¹⁷ established to regulate the air quality.³¹⁸ The applicant sought an order declaring the relevant provision of the

³¹⁰ *The Trustees for the time being of Groundwork Trust and Another v The Minister of Environment Affairs and Others* [2023] ZAGPPHC 1336; 39724/2019 (20 March 2023). It should be noted that by the time of writing this thesis the outcome of the appeal was not yet available.

³¹¹ Sic. Abbreviated as NEMAQA for purpose of this study.

³¹² Para 6.

³¹³ Para 12.

³¹⁴ Para 13.2.

³¹⁵ *The Trustees for the time being of Groundwork Trust and Another v The Minister of Environment Affairs and Others* (39724/2019) [2022] ZAGPPHC 208 para 241.1.

³¹⁶ *Sawmilling South Africa v Department of Environmental Affairs and Another* (28608/2019) [2021] ZAGPPHC 118 (22 February 2021).

³¹⁷ GN R1207 in GG2647 of 31 October 2018. Hereafter referred to as 2018 regulations.

³¹⁸ Para 1.

regulations “unconstitutional and invalid”.³¹⁹ Alternatively, the applicant sought an order to review and set aside the Minister’s decision to implement the impugned provisions in the regulations in terms of the *Promotion of Administration Justice Act* 3 of 2000 (PAJA).³²⁰ The respondent in opposing the review application held that there was no decision to be reviewed because there was no administrative action taken³²¹ and furthermore, that the declaratory relief sought was without basis.³²² Both parties to the review application conceded that the court must decide on the constitutionality of sub-category 9.5 of the listed activities in the 2018 regulations and whether the decision to publish the 2018 regulations in their current form was lawful.³²³

In March 2010, GN R248³²⁴ and sub-category 9.5 of the listed activity (“affected external heat source that generates hot steam for fired kilns”) applied to “all installations producing more than 10 tons per month.”³²⁵ In 2013 a further set of regulations were published. The first one was published in November 2013 under GN R831.³²⁶ They affected small boilers and applied to “any boiler with a design capacity equal to 10 MW but less than 50 MW net heat input...”³²⁷ Later, in November 2013, the second set of regulations was published, and the wording remained unchanged from the 2010 regulations.³²⁸ The applicant argued that both these two sets of regulations regulated the same wood drying installation activity and there was no need to regulate the installation in terms of two different sets of Regulations.³²⁹

In May 2018, the Minister published a draft of the environmental regulations and invited all interested persons to submit their comments.³³⁰ The regulations proposed

³¹⁹ Para 2.

³²⁰ Para 3.

³²¹ Para 6.1.

³²² Para 6.2.

³²³ Para 7.

³²⁴ GG 33064 of 31 March 2010.

³²⁵ Para 22.

³²⁶ GG 36973 of 1 November 2013.

³²⁷ Para 24.

³²⁸ Para 25.

³²⁹ Para 26 & 27.

³³⁰ Para 31.

to limit the application of listed activities in sub-category 9.5 from regulating all installations that produce more than 10 tons of dried wood per month to only “processes involving directly fired kilns only” irrespective of the monthly output.³³¹ However, the Minister realised that the promulgation of the proposed draft would result in most of the applicant’s installation activities being absolved from being licensed under NEMAQA and such an exclusion would be contrary to the object of the Act and inconsistent with air quality management.³³² In October 2018, the Minister published a further environmental regulation under GN R516,³³³ and sub-category 9.5 of the listed activity, unlike the 2010 and 2013 regulations covered a broader phrase that included the drying of all wood, in all installations that produce more than 10 tons of dried wood per month.³³⁴

The court, in dealing with the application and the relief sought, firstly considered whether the applicant could rely on section 1(c) of the Constitution³³⁵ and whether the review application was brought without unreasonable delays.³³⁶ The court held that the applicant cannot rely on section 1(c) of the Constitution as an alternative to the PAJA because if the conduct of the Minister constitutes an administrative action, then PAJA should apply.³³⁷ Furthermore, the court held that the applicant’s decision to institute the review application 178 days after the regulations were published does not constitute an unreasonable delay.³³⁸ This is because the delay was caused by the applicant’s attempt to resolve the matter directly with the respondent by exhausting all internal remedies before approaching the court.³³⁹

Lastly, in determining whether there was an administrative action capable of being reviewed in terms of PAJA, the court rejected the respondent’s argument that the decision to “list drying of wood using external heat source” was taken in 2013 and not in 2018, it was merely reinstated in 2018 and therefore the applicant should

³³¹ Para 56.

³³² Para 58.

³³³ GG 41650 of 25 May 2018.

³³⁴ Para 33.

³³⁵ Para 35

³³⁶ Para 41.

³³⁷ Para 40.

³³⁸ Para 47.

³³⁹ Para 46.

have brought the application to review the regulations under PAJA in 2013.³⁴⁰ The court held that the decision to deviate from the proposed 2018 regulations to reinstate the 2013 regulations constituted taking a decision, and the public should have been granted an opportunity to comment.³⁴¹ Consequently, this led to the court reviewing the decision and setting aside the Minister's decision.³⁴²

This case demonstrates the importance of implementing in a "reasonable" manner measures that are aimed at guarding against air pollution that is harmful to health and wellbeing. Failure to reasonably implement "legislation and other measures" will result in non-compliance with the state's obligation to prevent pollution and thus exempting activities that harm the health and wellbeing from complying with air quality management measures. Additionally, this would amount to disregarding the significance of the license authority and contrary to the objectives of NEMAQA. The case highlights not only the importance of implementing laws aimed at preventing pollution and environmental degradation, but also the importance of implementing these laws in a "reasonable" manner that is in accordance with the law as per the state's obligation. This would also apply to compliance with minimum emission standards.

4.6 Conclusion

This chapter discussed what constitutes minimum emission standards, how are they determined, and their practical application. Furthermore, the chapter discussed the application for postponement of compliance with minimum emission standards, what such application should entail in order to succeed, and how long the duration for such postponement should be permitted. The chapter refers to two cases and case example whereby researchers determined the possible impacts of actions that Eskom can undertake to minimise its pollution and comply with the minimum emission standards. The research indicated that the "Best Available Technology" installation would be the best option because of its environmental, social, and

³⁴⁰ Para 51.

³⁴¹ Para 85.

³⁴² Para 96.

economic benefits as demonstrated in the example above. Finally, this chapter discussed how the judiciary addressed issues about non-compliance to minimum emission standards and why such non-compliance amounts to an infringement of section 24 of the Constitution, thus addressing the research question of the study. It was found that the ongoing non-compliance to minimum emission standards in the Highveld area infringes on the communities' right to an environment that is not harmful to their health or well-being, as provided in section 24 of the Constitution. The next chapter will conclude the study, discuss the findings made in relations to the study conducted, and make recommendations as to how best the shortcomings can be addressed where possible.

Chapter 5: Conclusion and recommendations

5.1 Introduction

The study's aim was to analyse to what extent does non-compliance with the minimum emission standards infringes section 24 of the Constitution and also to determine whether non-compliance with the minimum emission standards is necessary in order to keep the economy going. The study, is an attempt to address the question of whether non-compliance with the minimum emission standards violates the environmental right in section 24 of the Constitution. The right to have an environment that is not harmful to your health and well-being, consulted various sources such as legislation, regulations, and case law as well as journals, thesis, and dissertations.

In order to protect people from air pollutants that are harmful to health and well-being, the NEMAQA reformed the law that regulates air quality through the use of minimum emission standards. It replaced the APPA that did not specifically deal with ambient air quality.

Chapter two discussed the development of air quality management, the current state of air quality in South Africa, the need to address air quality and how sustainable development balances the social, economic, and environmental considerations in the context of air quality management.³⁴³ From this chapter, it is clear that the state of air quality in South Africa is not conducive to the health and well-being of the people and the environment.³⁴⁴ The state of the air quality leads to various health implications, such as respiratory illnesses, with more severe impacts on children and also erodes building infrastructure through the process of acid rain.³⁴⁵

Chapter three discussed the environmental provision in terms of section 24 of the Constitution. The chapter discussed further what term the environment

³⁴³ See para 2.2.

³⁴⁴ See para 2.3.

³⁴⁵ See para 2.4.

encompasses and the judicial interpretation of what constitutes harming “health and well-being” in the context of air pollution.³⁴⁶ Additionally, sustainable development in terms of the Constitution finds application in relation to air quality in that it mandates the government to protect the air quality as a natural resource for the present generation and future generations, by limiting its exploitation. The courts and scholars suggest that the concept should be able to balance the polluting emissions from economic activities with the community’s need for an enduring healthy environment.³⁴⁷ This should be done through minimising the air pollutants from industries rather than shutting them down because of their social and economic benefits.

Chapter four defined minimum air emission standards as the permissible amount, volume, emission rate or concentration of a substance or mixture of substances that results from one of the listed and identified activities in the Government Notice.³⁴⁸ They differ from national air quality standards in that the national air quality standards refer to the set “permissible amount or concentration of any substance or mixture of substance in ambient air” that causes or has the potential to cause a threat to the environment, health and well-being.³⁴⁹ The *Trustees of the Time Being* case indicated that the ongoing high levels of ambient air pollution in the Highveld Priority Area due to non-compliance with the minimum emission standards infringes the community’s right to an environment that is not harmful and well-being as provided in section 24(a) of the Constitution.³⁵⁰ Furthermore, the chapter considered the implications of failure to reasonably implement “legislation and other measures” to regulate air pollution.³⁵¹ The case study also suggested plausible ways that Eskom can use to help them comply with minimum emission standards.³⁵²

³⁴⁶ See para 3.2.1.

³⁴⁷ See para 3.2.2.

³⁴⁸ See para 4.3.

³⁴⁹ See para 4.2.

³⁵⁰ See para 4.5.1.

³⁵¹ See para 4.5.2.

³⁵² See para 4.4.1.

5.2 Findings

The study's main finding is that the air quality management measures have not been effective in bringing industries' air emissions into compliance with the minimum emission standards.³⁵³ There seems to be poor compliance with minimum emission standards, which results in poor air quality.³⁵⁴ This harms the health and well-being of the people, the biodiversity, the infrastructure and the environment in general.³⁵⁵ South Africa's air quality enforcement measures seem to be lenient and have ineffective punitive measures for non-compliance.³⁵⁶ South Africa has limited ambient monitored data available due to poor maintenance of air monitoring stations.³⁵⁷

The NAAQS are more lenient than the WHO standards,³⁵⁸ yet these lenient standards are still violated in various areas.³⁵⁹ This means that the concentrations permitted by the law in terms of NAAQS are not conducive for human exposure and may have a detrimental impact on the health and well-being of the people, particularly children and infants, due to their higher respiratory rate and underdeveloped physiological system.³⁶⁰ It is common cause that developing countries, such as South Africa, cannot have the same national air quality standards as prescribed by the WHO due to varying sources of pollution such as dust, and biomass burning.³⁶¹

Non-compliance with the minimum emission standards impacts people's right to an environment that is not harmful to their health and well-being.³⁶² The balancing act of weighing up people's health and well-being vis-à-vis economic development with weak air pollution management, can never be to the detriment of people's health

³⁵³ See para 2.3 & 4.3.

³⁵⁴ See para 4.3

³⁵⁵ See para 2.4.

³⁵⁶ See para 2.4.

³⁵⁷ See para 2.3.

³⁵⁸ See para 2.3.

³⁵⁹ See para 2.3.

³⁶⁰ See para 2.4

³⁶¹ See para 2.3.

³⁶² See para 4.5.1.

and well-being. However, industries are here to stay, therefore industry should at least adhere to the minimum emission standards.

5.3 Recommendations

The following recommendations are made:

Government and industry have an obligation to ensure that people live in an environment that is not detrimental to their health and well-being and particularly so in the case of air quality. People's health and well-being should be placed prioritised, rather than economic development or recovery. Government should as a minimum ensure adherence to the minimum emission standards.

The Department of Forestry, Fisheries and Environment, the provincial departments responsible for the environment and local government, must ensure, via regular inspections, that their monitoring stations are in working order and able to measure the ambient air quality; concordantly, older stations should be updated. Provisions should be made further to exempt them from power outages and remain operational throughout.³⁶³ This will ensure that the government always produces reliable information regarding the current air quality and thus be best placed to enforce compliance.

Moreover, the government must take punitive measures against industries that do not comply with emission standards and use them as a form of deterrence against non-compliance.³⁶⁴ The same should apply for failure to bring priority areas into compliance within the agreed timeframe in terms of the AQMP, and the second draft of the AQMP must have stricter measures compared to the first draft except where there is satisfactory compliance. Studies show that compliance within the agreed timeframe have health and economic benefits.³⁶⁵ Currently, no entity has been

³⁶³ See para 2.3.

³⁶⁴ See para 4.3.

³⁶⁵ See para 4.4.1.

criminally sentenced for failure to comply with air emission standards. However, in 2021 Eskom was indicted for failure to comply, but the matter is still ongoing.³⁶⁶

Lastly, the NAAQS needs to be revised to reflect the current state of the air quality in South Africa as well as aim to replicate the standards set in 2005 by the WHO.³⁶⁷ The national standards were promulgated in December 2009 and only one pollutant has had its standards revised to reflect the current state of air quality.³⁶⁸ It is acknowledged that although South Africa cannot comply with the WHO air quality guidelines standards they should inform the setting of South Africa's national standards. The comparative study by Garland reflects that the government does not intend to revise the national standards until 2030.³⁶⁹ However the recent *Trustees for the time being of Groundwork Trust and Another v The Minister of Environment Affairs and Others* case specifically states that non-compliance to minimum air emission standards is contravention of section 24 of the Constitution.³⁷⁰

³⁶⁶ See para 4.3; Also see CER <https://cer.org.za/news/another-milestone-as-criminal-charges-proceed-against-coal-polluter-eskom>.

³⁶⁷ The NAAQS for PM₁₀ established by WHO is 50µg/m³ for 24 hours and 75µg/m³ for South Africa; See also Garland *et al* 2021 1.

³⁶⁸ See GN 1210 in GG 32816 of 24 December 2009 as repealed.

³⁶⁹ Also see Garland *et al* 2021 *Clean Air Journal* 2.

³⁷⁰ See para 4.5.1.

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