

**DEPARTMENT OF ENVIRONMENTAL AFFAIRS
NOTICE 356 OF 2016**

DRAFT STRATEGY TO ADDRESS AIR POLLUTION IN DENSE LOW-INCOME SETTLEMENTS

I, Bomo Edith Edna Molewa, Minister of Environmental Affairs, hereby give notice of my intention to publish the strategy to address air pollution in dense low-income settlements, set out in the Schedule hereto.

Members of the public are invited to submit to the Minister, within 60 (sixty) days after the publication of the notice in the *Gazette*, written representations or objections on the draft strategy to address air pollution in dense low-income settlements to the following addresses:

By post to: The Director-General: Department of Environmental Affairs
 Attention: Adv Avhantodi Munyai
 Private Bag X 447
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By hand at: 473 Steve Biko street, Environment House, Arcadia, Pretoria

By e-mail: amunyai@environment.gov.za,

Any inquiries in connection with the draft Strategy can be directed to Ms Elizabeth Masekoameng at 012 399 9202/1 or Adv Avhantodi Munyai at 012 399 9211

Comments received after the closing date may not be considered.


BOMO EDITH EDNA MOLEWA
MINISTER OF ENVIRONMENTAL AFFAIRS

SCHEDULE

DRAFT STRATEGY TO ADDRESS AIR POLLUTION IN DENSE LOW-INCOME SETTLEMENTS

**June
2016**

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List of Abbreviations

APPA	Atmospheric Pollution Prevention Act
AQA	Air Quality Act
AQMP	Air Quality Management Plan
CFLs	Compact Fluorescent Lamps
CoGTA	Department of Cooperative Governance and Traditional Affairs
DCOG	Department of Cooperative Governance
DEA	Department of Environmental Affairs
DHS	Department of Human Settlement
DoE	Department of Energy
DoH	Department Of Health
GIS	Geographical Information System
IP&WMP	Integrated Pollution and Waste Management Policy
NEMA	National Environmental Management Act
NCC	National Coordinating Committee
NGOs	Non-Government Organisations
Stats SA	Statistics South Africa
SWH	Solar Water Heating
RDP	Reconstruction Development Programme
ToRs	Terms of Reference

EXECUTIVE SUMMARY

Air pollution monitoring data has shown that there are some geographic areas within the country, where ambient air quality standards are being exceeded and this is posing a threat to human health and the environment in those areas. What has become clear is that household utilisation of some fossil fuels/dirty fuels are a major contributor to the observed exceedances of ambient air quality standards in residential areas. The problem of residential air pollution is more often than not, associated with dense low income settlements.

Air pollution in dense low-income settlements in the South Africa poses numerous challenges. These challenges are interrelated and intertwined with the conditions of living making clean air quality in dense low-income settlements almost impossible to achieve when the problem is addressed in isolation.

A number of interventions that directly and indirectly address air pollution in dense low-income settlements have been implemented over the years. Some were meant to primarily address energy shortages and energy conservation; some were aimed at controlling indoor air pollution and addressing household fuel-related accidents. While the general outcome was some improvement in air quality, for most of the interventions there was no deliberate alignment with ambient air quality objectives.

The goal of the strategy is to map out the path that the country needs to take in reducing the impact of air pollution in dense low income communities. Its aims to provide a coordinated approach in implementation of efforts directed at ensuring that ambient air quality in dense low-income settlements is in compliance with National Ambient Air Quality Standards, thereby ensuring the right to air that is not harmful to people's health and well-being as required by section 24 of the Constitution of South Africa.

The objectives of the Strategy are:

Objective 1: Ensure that efforts to address air pollution in dense low- income settlements are undertaken in a coordinated and coherent manner

This will be achieved through:

Activity 1a: Establishment of a coordinating structure: The National Coordinating Committee on Residential Air Pollution (NCC)

Activity 1b: Ensure, through the NCC, that interventions aimed at reducing air pollution in dense low-income settlements are effectively prioritized

Objective 2: Facilitate, through the forum, the implementation of interventions aimed at reducing emissions from dense low-income settlements

This is will be achieved through:

Activity 2a: Provision of affordable or subsidised clean energy alternatives

Activity 2b: Ensure that low-income household are energy efficient

Activity 2c: Influence development planning initiatives to take into account air quality issues

Activity 2d: Encourage social upliftment programmes with air quality benefits

Activity 2e: Create public awareness on air pollution

Objective 3: Ensure continued monitoring, evaluation and reporting on the successes and failures of the proposed interventions and on air quality improvements

This is will be achieved through:

Activity 3a: Monitoring and Evaluation of Implementation

Activity 3b: Reporting

To achieve the goal and objectives, a clear understanding of the differing needs in our targeted areas is crucial. This is to help the country develop and implement sustainable intervention measures/solutions (i.e. clean fuels or energy services to households) in the targeted communities. In order to ensure that adequate resources are allocated to these, there is a need for information on:

- Extend of the problem – As evident by the measured ambient air quality data and existing health studies. This information will allow the implementers in prioritising areas of concerns
- Driving factors to the use of dirty fuels – Information on the reasons for using dirty fuels should be identified. If price is the issue, then the price should be known so that any alternative provided or the subsidy provided can compete with the currently used dirty fuels. These driving forces will differ slightly from one location to the other.
- Barriers to specific interventions – Information on what has and has not worked in the past in attempting to address the issue. For example, poverty, infrastructure issues, security etc.

Financial viability of energy technology and/or intervention strategy has the greatest influence on the sustained adoption of the technology/intervention. The re-prioritisation of existing government budget allocations to activities that have positive air quality impacts in dense low-income communities will be motivated and justified by appropriate cost-benefit analyses.

To implement the strategy, the Government will have control over decisions and resources and participate in the implementation of the strategy. The following organizations will have a role in the implementation of the strategy

- Department of Environmental Affairs
- Department of Energy
- Department of Human Settlement

- Department of Health
- Department of Cooperative Governance
- Department of Social Development
- Provinces and Municipalities
- Parastatals and Private organizations
- Non-Governmental Organizations (NGOs) and Communities

It is only with successful partnerships between the Government, private sector and civil societies particularly those working in rural areas that there can be greater effective in implementation of the strategy.

1. INTRODUCTION

1.1. Background

The Constitution of South Africa, 1996 Constitution of the Republic of South Africa (Act No. 108 of 1996) (the Constitution) provides the foundation for environmental regulation and policy in South Africa. The right to environmental protection and to live in an environment that is not harmful to health or well-being is set out in Section 24 of Chapter 2 of the Bill of Rights. This fundamental right underpins environmental policies and laws.

From 1965 to 2005, the approach to air quality management in South Africa was informed and driven by the Atmospheric Pollution Prevention Act (Act No. 45 of 1965) (APPA). For many years, this Act was regarded as ineffective for a number of reasons, not least of which was the broadly-held belief that APPA, and specifically the way APPA was implemented, had not defended South Africa's air quality from the emergence of various air pollution "hotspots" around the country. In essence, the emergence of these hotspots is often considered to be as a result of APPA's specific focus on individual source emissions without effectively considering the cumulative impacts of these emissions.

In this regard, the Constitution's Bill of Rights directly challenged the APPA approach by focussing on the quality of the environment and, by extension, the quality of the ambient air in the Republic. Government's Integrated Pollution and Waste Management Policy (IP&WM, 2000) put a further nail in APPA's coffin by requiring a new approach to air quality governance – an approach that used improved ambient air quality as the objective for governance. In summary, APPA was broadly regarded as being outdated and unconstitutional.

The President assented to the National Environment Management: Air Quality Act (AQA, Act No. 39 of 2004) on 19 February 2005. Given the short-comings of APPA, the AQA marked a sea-change in South Africa's approach to air quality management, an approach that is now fully aligned with international best practice. The AQA makes provisions for receptor-based air pollution management by setting the targets for air quality management in the form of national ambient air quality standards and then provides a host of regulatory tools to assist government in meeting these targets. These are levels of pollutants below which ambient air quality can be considered to be not harmful to human health. The National Ambient Air Quality Standards were promulgated in 2009. There are more than 90 Ambient Air Quality monitoring stations in the country measuring the levels ambient air quality in relation to the National Ambient Air Quality Standards.

Ambient air quality monitoring data has shown that there are some geographic areas within the country, where ambient air quality standards are being exceeded and this is posing a threat to human health and the environment in those areas. This observation has led to the declaration of such areas as National Air Pollution Priority Areas in accordance with section 18 of the AQA. To date, three priority areas have been declared, these are shown in figure 1 below. The first priority area, the Vaal Triangle Airshed Priority Area (VTAPA) which covers parts of Gauteng and Free State provinces, was declared in 2006. This was followed by declaration of the Highveld Priority Area (HPA) which covers parts of Mpumalanga and Gauteng provinces, in 2007. For these two priority areas, substantial evidence that ambient air quality standards are being exceeded as a result of activities that are causing air pollution in the area. The

Waterberg-Bojanala Priority Area (WBPA) was the third to be declared in 2012 and it encompasses parts of in Limpopo and Northwest Provinces. With regard to the Waterberg-Bojanala Priority Area substantial evidence exists that national ambient air quality standards have the potential to be exceeded in future as a result of current (and planned) activities that contribute to air pollution in the area. The Waterberg Bojanala priority area declaration therefore presents a proactive approach to air quality management, seeking to provide guidance to development activities in order to avoid an irreparable state of air in the region.

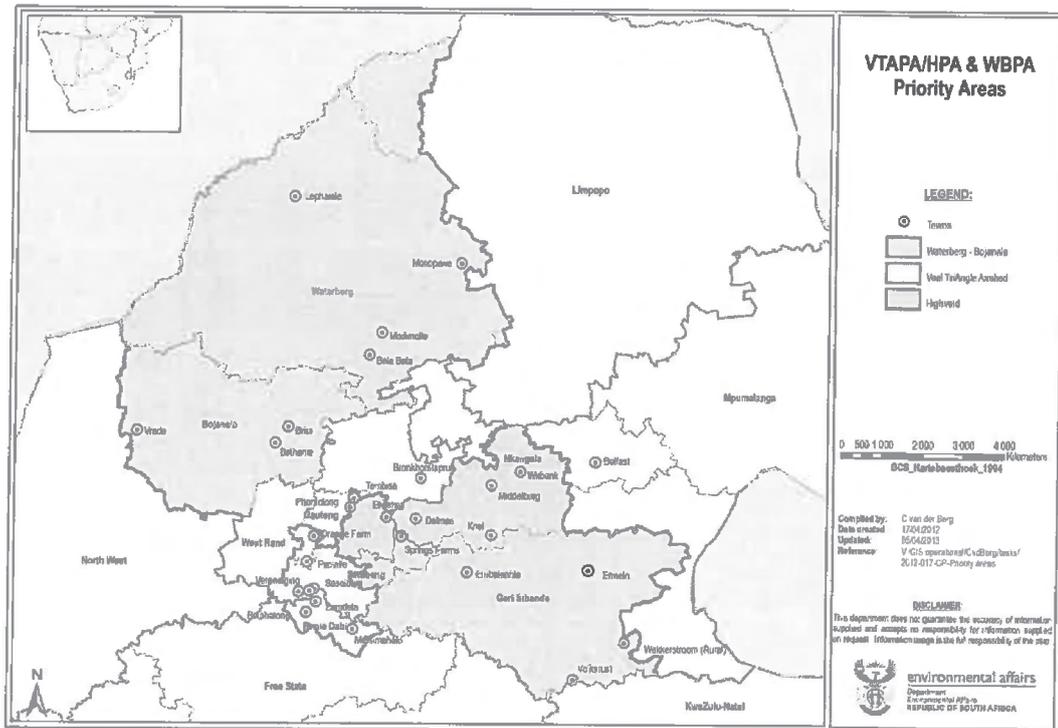


Figure 1: National Priority Areas declared under section 18 of the Air Quality Act

Once an area is declared a priority area, the AQA requires that an Air Quality Management Plan (AQMP) for that area be developed. One of the steps involved in the development of an AQMP is the baseline assessment which characterises the extent of the air quality problems in the area. Air quality baseline assessments undertaken in the currently declared priority areas have shown that domestic/residential fuel burning is one of the significant contributors to air pollution in these areas (see Figure 2).

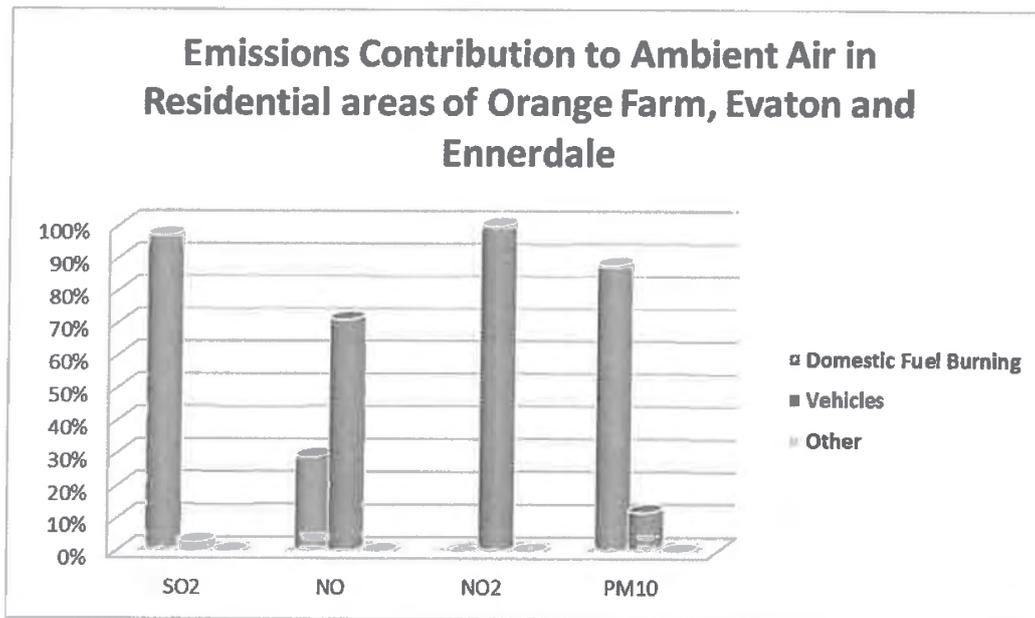


Figure 2: The contribution of residential air pollution (blue) to ambient air pollutants concentration in the Vaal triangle Priority Area "hotspot" zone 5, Residential areas of Orange Farm, Evaton and Ennerdale, (VTAPA AQMP, 2009)

1.2. Objectives of the strategy

The purpose of the strategy is to map out the path that the country needs to take in reducing the impact of air pollution in dense low income communities. The strategy comes about as a result of recognition of the need for a multi-departmental, multi-stakeholder approach to resolution of the problem. As a result the objectives of this strategy are centred on pulling resources and efforts of all departments and stakeholders together to value and measure their all efforts to resolve the problem.

The objectives of the strategy are:

- 1) Ensuring that efforts to address air pollution in dense low
- 2) Facilitating the implementation of interventions aimed at reducing emissions from low-income settlements
- 3) Ensuring continued monitoring, evaluation and reporting on the successes and challenges of the proposed and on air quality improvements.

1.3. Approach and methodology

The development of the strategy addressing emissions from dense-low-income settlements has been guided by a consultative process with relevant national and provincial departments.

This Strategy and Action Plan was developed in accordance with the spirit and letter of the cooperative and participatory governance requirements and principles contained in Chapter 3 of the Constitution, the NEMA and the AQA. Consultation included public participation workshops, consultation with provincial governments through the Provincial Air Quality Officers forums and National departments through the Intermediate National Coordination Committee. Details of the consultation process are shown in Table 1.

Table 1: Phases for developing the strategy to address air quality in dense low-income settlements

PHASE	ACTIVITIES AND OUTPUTS
Strategy drafting January to June 2013	Strategy was drafted by the Department of Environmental Affairs taking into account the outcomes of the preliminary bilateral meetings held with the relevant departments (Department of Energy, Department of Housing and Department of Health)
Stakeholder Workshop October 2013	Multi-stakeholder workshop was held on 31 October 2013 at Protea Hotel OR Tambo. Provincial and municipal officials and representatives from the private sector participated in the workshop
Strategy finalisation November 2013- 2014	The strategy was finalised in consultation with the relevant departments (Energy, Housing and Health) and taking into account inputs made by stakeholders Further consultations were made with DCOG, DTI and DSD
Cabinet clusters consultations 2015	The strategy was presented to different cabinet clusters

Consultation with government departments, provinces and municipalities has ensured that this strategy is an integrated strategy for the whole of government, and is aligned with institutional capacity and intergovernmental systems. This strategy seeks to mainstream government planning and reporting systems in all efforts to address air pollution in dense low-income settlements.

1.4. Definition and scope

According to Stats SA, low-income households refers to housing for people whose combined monthly household income is below R 3 500 per month (Census, 2011). For the purpose of this document, low-income settlements will refer to all areas that have been identified by various studies and AQMP baseline assessments as having relatively high emissions as a result of domestic burning of dirty fuels. These areas are highlighted in

Table 2.

Table 2: Areas where residential air pollution problems were identified as part of baseline assessments of the air quality management plans and in other studies

<u>Areas within the national priority areas</u>				
AREA	ENERGY SOURCE	CRITICAL AREAS IDENTIFIED	SOURCE OF INFORMATION	YEAR PUBLISHED
Vaal Triangle Airshed Priority Area	Coal	Soweto, Orange Farm, Evaton, Sebokeng, Sharpville, Boipatong, Bophelong, Zamdela	VTAPA AQMP Baseline Assessment Report	2009
Highveld Priority Area	Wood and Coal	Lesedi, Ekurhuleni, Victor Khanye, Steve Tshwete, Emalahleni, Secunda, Ermelo, Standerton, Balfour	HPA AQMP	2011
Waterberg-Bojanala Priority Area	Wood and coal	Lephalale, Mogalakwena, Bela-Bela. Madibeng, Rustenburg	Waterberg District AQMP	2009
	Coal, wood and paraffin		Bojanala District AQMP	2011
<u>Areas outside the national priority areas</u>				
AREA	ENERGY SOURCE	CRITICAL AREAS IDENTIFIED	SOURCE OF INFORMATION	YEAR PUBLISHED
GAUTENG PROVINCE				
City of Tshwane	Not Specified	Mamelodi, Marabastad	Not Specified	2006-2008

Ekurhuleni Metro	Coal and wood	Brownfield, Tembisa, Etwatwa	Ekurhuleni Metro AQMP	2005
City of Johannesburg			City of Johannesburg AQMP	2003
WESTERN CAPE PROVINCE				
City of Cape Town	Not Specified	Khayelitsha	City of Cape Town AQMP	2005
LIMPOPO PROVINCE				
Capricorn District	Wood, coal and paraffin	Polokwane Local Municipality	Capricorn District AQMP	Not Specified
KWA-ZULU NATAL PROVINCE				
KZN- wide	Wood, Paraffin, Coal	Magwaveni, Cato Crest, Hammers Estate, Umlazi, Maphela, Mkhholombo, Ermvini, Lindelani, Seacow Lake, Gologodo- Ensimbini, bhambayi, Mdunduma.	NOVA Fridge Report	2006
eThekwin Metro	Paraffin	Cato Crest	Durban Kerosene Study	2007

2. POOR AIR QUALITY IN DENSE LOW-INCOME COMMUNITIES

The problem of residential air pollution is more often than not, associated with dense low-income communities rather than the more affluent residential communities. This difference in air quality, especially during winter, provides a key insight into the root causes of poor air quality in dense low-income communities:

- Low-income households cannot afford cleaner fuel options even if they are available. Lack of recourse limits fuel choices to the cheapest fuels namely: coal, wood and paraffin. Unfortunately, these are the dirtiest of fuels. Dense low-income settlements often have dirt roads, inadequate waste collection services, few trees, ground-cover etc., all of which contribute to or exacerbate air pollution.
- Dense low-income settlements are often located in areas directly impacted by other significant sources of air pollution including industrial and mining activities.
- Low-income households often include shacks or houses (including some government subsidised houses) that are poorly insulated. This means that they are often too cold in winter or too warm in summer – conditions that require disproportionate energy inputs, i.e. low income households use proportionally more of their resources to heat their homes in winter than middle- to high-income households.

Besides the contribution of income to the situation, the impact of residential air pollution is often heightened by the density of the settlements. The density of the settlement impact on the intensity of pollution and therefore of pollutants dispersion e.g. in less dense settlements, there is relatively more rigorous dilution of pollutants than in highly dense settlement patterns.

In South Africa the impact of residential fuel burning on ambient air quality has been observed through various State of Air reports showing exceedances of ambient air quality standards in areas where domestic fuel burning is known to exist. The following figures (**Error! Reference source not found.**, **Error! Reference source not found.** & **Error! Reference source not found.**) show examples of areas where ambient air quality standards are being exceeded in the country. What is also clear from the graphs is that in some of the areas where exceedances are reported, domestic fuel burning activities are also known to occur, in conjunction with other polluting activities (e.g. Zamdela (see table C of the VTAPA AQMP executive summary in Annexure 2), Olivenhoutbosch in City of Tshwane and Secunda in HPA).

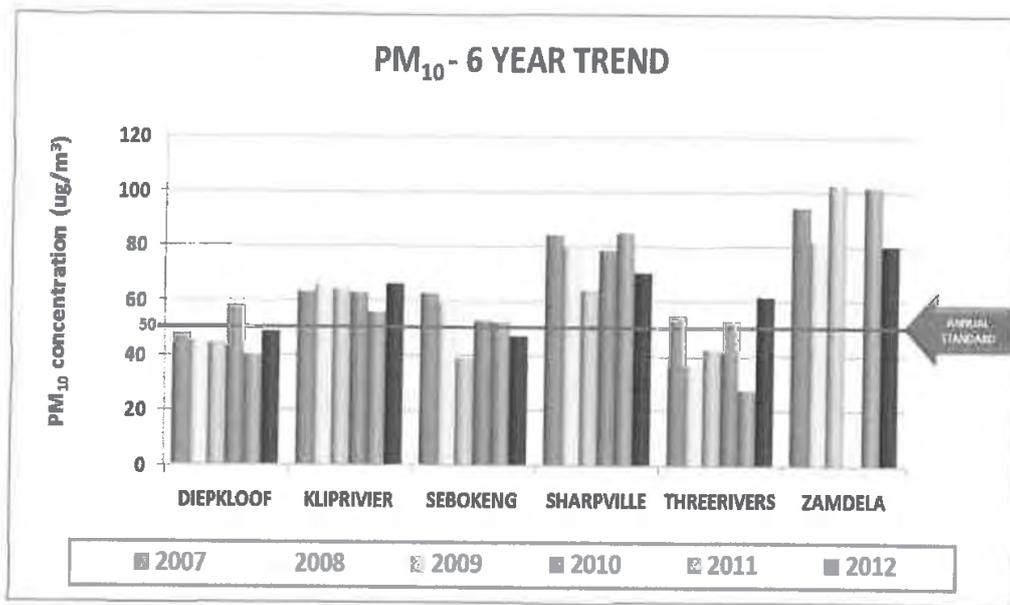


Figure 3: State of Air in the Vaal Triangle Airshed Priority Area

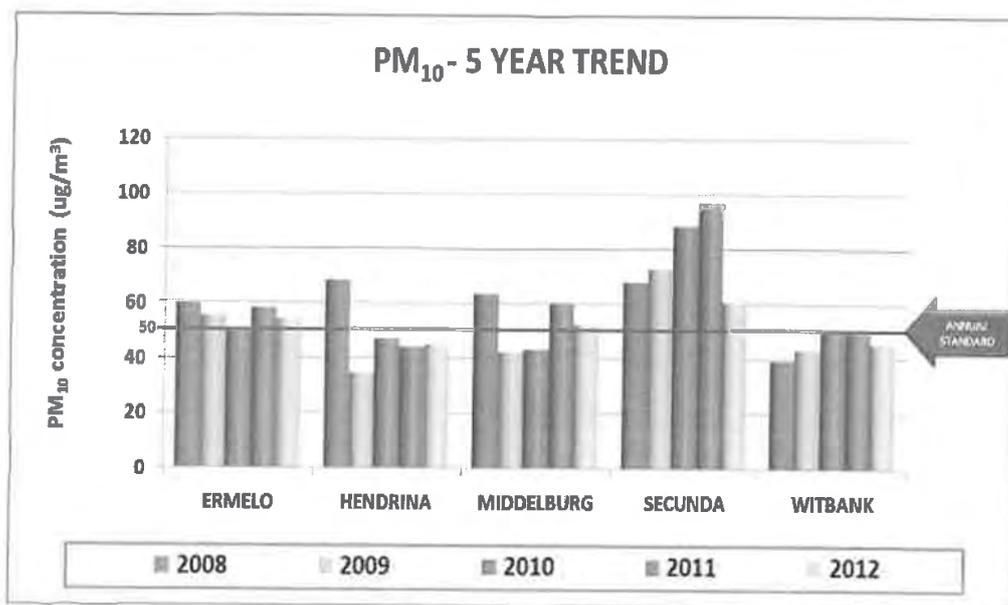


Figure 4: State of Air in the Highveld Priority Area