

## DEPARTMENT OF ENVIRONMENTAL AFFAIRS

NO. 518

25 MAY 2018

**NATIONAL ENVIRONMENTAL MANAGEMENT: AIR QUALITY ACT, 2004  
(ACT NO. 39 OF 2004)****NOTICE OF INTENTION TO AMEND THE 2012 NATIONAL FRAMEWORK FOR AIR QUALITY  
MANAGEMENT IN THE REPUBLIC OF SOUTH AFRICA**

I, Bomo Edna Edith Molewa, Minister of Environmental Affairs, hereby under section 7(5) and (6)(a), read with section 57(1) of the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004), give notice of my intention to amend the 2012 National Framework for Air quality Management in the Republic of South Africa, as set out in the Schedule hereto.

Members of the public are invited to submit to the Minister, within 30 days from the date of the publication of this notice in the *Gazette*, written comments or objections on the proposed amendments to the 2012 National Framework for Air Quality Management in the Republic of South Africa to the following addresses:

By post to:     The Director-General  
                  Department of Environmental Affairs  
                  Attention: Advocate Avhantodi Munyai  
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Any inquiries in connection with the notice can be directed to Ms Elizabeth Masekoameng at 012 399 9202 or Advocate Avhantodi Munyai at 012 399 9211.

**Comments received after the closing date may not be considered.**



**BOMO EDNA EDITH MOLEWA  
MINISTER OF ENVIRONMENTAL AFFAIRS**

## **SCHEDULE**



### **THE DRAFT 2017**

# **NATIONAL FRAMEWORK**

## **FOR AIR QUALITY MANAGEMENT IN THE REPUBLIC OF SOUTH AFRICA**

As contemplated in Section 7 of the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004) and serving as the Department of Environmental Affairs' Air Quality Management Plan as contemplated in Section 15(1) of the Act.

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## THE 2017 NATIONAL FRAMEWORK FOR AIR QUALITY MANAGEMENT IN THE REPUBLIC OF SOUTH AFRICA

## 1. INTRODUCTION

### 1.1 Background

The requirements for a National Framework on Air Quality Management in South Africa are stipulated in Section 7 of the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004), herein after referred to as the Air Quality Act or the AQA. The AQA requires the Minister, by notice in the Gazette, to establish a National Framework for achieving the objectives of the AQA. To this end, the minister published the 1<sup>st</sup> National Framework in 2007. As an inaugural framework, the 2007 framework was a less technical document that aimed at unpacking the AQA in some detail to ensure that all South Africans understand the intentions of the Act. The AQA further stipulates in section 7(5) (b) that the National framework must be reviewed in intervals of no more than 5 years. As such the 2007 National Framework was reviewed in 2012, leading to the publication of the 2012 National Framework. In accordance with the same clause, the framework was reviewed in 2017 and this document presents the revision of the 2012 National Framework.

### 1.2 Overview

The AQA is pivoted on the Bill of Rights contained in the Constitution of South Africa (1996), hereafter referred to as "the constitution". The Bill enshrines the rights of all people in the country and affirms the democratic values of human dignity, equality and freedom. The state must respect, protect, promote and fulfil the rights in the Bill of Rights.

Section 24 of the Constitution states that everyone has the right:

- a. *To an environment that is not harmful to their health or well-being; and*
- b. *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 the use of natural resources while promoting justifiable economic and social development*

In order to give effect to this right in the context of air quality, it is necessary to ensure that levels of air pollution are not harmful to human health or well-being, meaning that ambient air quality standards are achieved. To achieve this, the AQA provides an objectives-based approach to the management of air quality at different governance and operational levels and is the legislative means to ensuring that the rights described above are upheld. This framework presents the implementation framework of the AQA.

### 1.3 Purpose and scope of the National Framework

The purpose of the National Framework is to achieve the objectives of the AQA, and as such the National Framework provides a medium- to long-term plan of the practical implementation of the AQA. The Framework provides mechanisms, systems and procedures to promote holistic and integrated air quality management through pollution prevention and minimisation at source, and through impact management with respect to the receiving environment from local scale to international issues. Hence, the National Framework provides norms and standards for all technical aspects of air quality management.

Section 7(1) of the AQA requires the National Framework to include the following:

- Mechanisms, systems and procedures to –
  - attain compliance with ambient air quality standards;
  - give effect to the Republic's obligations in terms of international agreements;
- National norms and standards for –
  - the control of emissions from point and non-point sources;
  - air quality monitoring;
  - air quality management planning;
  - air quality information management; and
- Any other matter which the Minister considers necessary for achieving the object of the AQA.

Section 7(2) of the AQA requires that the norms and standards established in the National Framework are aimed at ensuring:

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- Opportunities for public participation in the protection and enhancement of air quality;
- Public access to air quality information;
- The prevention of air pollution and degradation of air quality;
- The reduction of discharges likely to impair air quality, including the reduction of air pollution at source;
- The promotion of efficient and effective air quality management;
- Effective air quality monitoring;
- Regular reporting on air quality; and
- Compliance with the Republic's obligations in terms of international agreements.

The National Framework, in terms of Section 7(3) of the AQA:

- binds all organs of state in all spheres of government; and
- may assign and delineate responsibilities for the implementation of the AQA amongst:

The different spheres of government; and different organs of state.

#### 1.4 Guiding principles

The National Framework is informed by the principles set out in Section 2 of the NEMA.

"SMART" principles are also relevant to goal and objective setting in air quality management. SMART principles are:

- Specific: Goals should be detailed and should relate to narrowly-defined tasks.
- Measurable: Goals should have defined end-points and a mechanism for benchmarking progress.
- Achievable: Goals should be set within the context of practical limitations.
- Realistic: Goals should acknowledge the current situation and aim to reach air quality goals that are protective of the right to an environment that is not harmful to health and well-being.
- Time-related: Time constraints should be factored into goal-setting exercises, and time frames provided for achieving goals that are set.

#### 1.5 Structure of the document

- *Chapter 1* provides the purpose of the National Framework and its scope.
- *Chapter 2* provides insights into the legislative and policy context relating to air quality management.
- *Chapter 3* describes the roles and responsibilities of the stakeholders in respect of air quality management.
- *Chapter 4* outlines the integrative air quality governance cycle emphasising the dependence of successful implementation on horizontal and vertical integration.
- *Chapter 5* discusses problem identification and prioritisation, norms and standards for the setting of ambient air quality standards, for Listed Activities and emission standards, Controlled Emitters, Controlled Fuels and Air Quality Management Plans (AQMPs) and provides information on regulations, compliance and enforcement, air quality impact assessments and the linkages between the approval process for Environmental Impact Assessments (EIAs) and the application for an Atmospheric Emission Licence (AEL). The underpinning principles of public participation, capacity development and information dissemination are also covered in Chapter 5.
- *Chapter 6* discusses the National Framework review process.

## THE 2017 NATIONAL FRAMEWORK FOR AIR QUALITY MANAGEMENT IN THE REPUBLIC OF SOUTH AFRICA

## 2. LEGISLATIVE AND POLICY CONTEXT

### 2.1 Introduction

The management of air quality in South Africa is influenced by policy and legislation developed at international, national, provincial and municipal levels. National policy provides the critical reference point for air quality management and is discussed in detail in Paragraph 2.2. Provincial legislation expands on the national approach and can be used to address particular air quality issues, although there are currently no examples of provincial air quality legislation within South Africa. Municipal authorities influence air quality governance through the introduction of by-laws, which are legally enforceable within the municipal authority's jurisdiction (Paragraph 2.3). In an international context, trans-boundary air pollution and global air quality impacts are relevant. South Africa has obligations under multi-lateral environmental agreements, which are discussed in Paragraph 2.4. Some progress towards regional air pollution agreements within the southern African context has recently been made and is discussed in Paragraph 2.4.4.

### 2.2 National policy

#### 2.2.1 Background

Since 1965, the approach to air pollution control in South Africa was informed and driven by the Atmospheric Pollution Prevention Act, 1965 (Act No. 45 of 1965) (hereinafter "the APPA"). The APPA did not set targets or standards that would permit the achievement of an environment that is not harmful to health or well-being. This requirement is now contained in the Bill of Rights in the Constitution of the Republic of South Africa, 1996, (see Paragraph 1.2 of this document). The Constitution is thus the pivotal piece of legislation that informs all environmental legislation.

Given this environmental right, it was clear that air quality legislation that included an underlying drive towards cleaner air was needed. Following on from this, the publication in May 2000 of a critical policy document, the White Paper on Integrated Pollution and Waste Management for South Africa – A Policy on Pollution Prevention, Waste Minimisation, Impact Management and Remediation (IP&WM, 2000) marked a turning point for pollution and waste governance in South Africa. From an air quality management perspective, the new policy represented a paradigm shift in approach and necessitated the introduction of a new approach to air quality management, which is detailed in Paragraph 2.2.3.

The new national air quality legislation forms one of a suite of laws that are framed within overarching environmental management legislation, which is outlined in Paragraph 2.2.2 as a precursor to the discussion on national air quality legislation.

#### 2.2.2 National Environmental Management Act, 1998 (Act No. 107 of 1998) (the NEMA)

The NEMA as amended provides the legislative framework for environmental management in South Africa. Its purpose is to provide for cooperative environmental governance, and it defines principles for decision-making on matters affecting the environment. Some of the key principles of the NEMA were mentioned in Paragraph 1.4. Further principles from Chapter 1 of the NEMA that are relevant to air pollution are:

- *pollution avoidance or minimisation* - that pollution and degradation of the environment must be avoided, or, where they cannot be altogether avoided, are minimised and remedied;
- *waste avoidance and consideration of life cycle assessment* - that waste is avoided, or where it cannot be altogether avoided, it must be minimised and re-used or recycled where possible or disposed of in a responsible manner;

The NEMA further provides for the establishment of the fora or advisory committees as a body to encourage stakeholder participation (Section 3 of the NEMA). Cooperative governance is outlined in Chapter 3 of the NEMA and mechanisms for conflict resolution in Chapter 4. Integrated Environmental Management is used as a guiding philosophy to ensure that impacts are considered across different spheres of influence, including social dimensions (Chapter 5 of the NEMA). Chapter 6 of the NEMA takes cognisance of obligations in terms of international agreements, while Chapter 7 provides legislative means for compliance and enforcement. Methods of compliance, enforcement and protection within the jurisdiction of the NEMA are detailed, and the process for developing Environmental Management Cooperation Agreements, which are a mechanism for cooperative governance, is outlined in NEMA Chapter 8.

The NEMA provides government with the regulatory tools to implement the National Environmental Management Policy. The AQA forms one of the many pieces of legislation that fall under the ambit of the NEMA.

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## 2.2.3 National Environmental Management: Air Quality Act, 2004 (the AQA)

The AQA represents a distinct shift from exclusively source-based air pollution control to holistic and integrated effects-based air quality management. It focuses on the adverse impacts of air pollution on the ambient environment and sets standards for pollutant levels in ambient air. At the same time it sets emission standards to minimise the amount of pollution that enters the environment.

The objects of the legislation as stated in Chapter 1 are as follows:

- to protect the environment by providing reasonable measures for -  
the protection and enhancement of the quality of air in the Republic;  
the prevention of air pollution and ecological degradation; and  
securing ecologically sustainable development while promoting justifiable economic and social development; and
- generally to give effect to Section 24(b) of the Constitution of the Republic of South Africa, 1996, in order to enhance the quality of ambient air for the sake of securing an environment that is not harmful to the health and well-being of people.

The National Framework is one of the significant functions detailed in Chapter 2 of the AQA. The framework serves as a blueprint for air quality management and aims to achieve the air quality objectives as described in the preamble of the AQA.

Chapter 3 of the AQA covers institutional and planning matters summarised as follows:

- The Minister may establish a National Air Quality Advisory Committee as a subcommittee of the NEAF established in terms of the NEMA;
- Air Quality Officers (AQOs) must be appointed at each level of government (national, provincial, municipal);
- Each national department or province preparing an Environmental Implementation Plan (EIP) or Environmental Management Plan (EMP) in terms of the NEMA must include an Air Quality Management Plan (AQMP). Each municipality preparing an Integrated Development Plan (IDP) must include an AQMP;
- The contents of the AQMPs are prescribed in detail;
- Each organ of state is required to report on the implementation of its AQMP in the annual report submitted in terms of the NEMA.

In Chapter 4 of the AQA, air quality management measures are outlined in terms of:

- the declaration of Priority Areas, where ambient air quality standards are being, or may be, exceeded;
- the listing of activities that result in atmospheric emissions and which have or may have a significant detrimental effect on the environment;
- the declaration of Controlled Emitters;
- the declaration of Controlled Fuels
- other measures to address substances contributing to air pollution, that may include the implementation of a Pollution Prevention Plan or an Atmospheric Impact Report;
- the requirements for addressing dust, noise and offensive odours.

Licensing of Listed Activities through an Atmospheric Emission Licence (AEL) is addressed in Chapter 5 of the AQA, international air quality management in Chapter 6 and offences and penalties in Chapter 7.

## 2.2.4 Other related national legislation

There are many other pieces of national legislation that impact either directly or indirectly on the implementation of the AQA. These have been captured in Table 1 showing the links and relevance to air quality management in general and the implementation of the AQA in particular.

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Table 1: National legislation directly or indirectly linked to the management of air quality

| Legislation   | Air quality management links  | Relevance  |
|---|---|--|
| National Key Points Act, 1980 (Act No. 102 of 1980)                   | <ul style="list-style-type: none"> <li>Provides for the protection of significant State or private assets, relative to national security</li> <li>Regulates the flow of information regarding Key Point activity</li> <li>Allows for measures to be implemented to maintain the security of a Key Point</li> </ul>  | Many significant emitters have been classified as National Key Points, and the Act is used to regulate access to information                                 |
| Protection of Information Act, 1982 (Act No. 84 of 1982)              | <ul style="list-style-type: none"> <li>Covers the protection of information related to defence, terrorism and hostile organisations</li> <li>Information regarding these activities in any form is prohibited access and cannot be disseminated</li> <li>Prohibited places can be declared, which also fall under this protection</li> </ul>  | Can be used to regulate access to information on air quality   |
| Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983) | <ul style="list-style-type: none"> <li>Regulates burning of veld, except in state forests</li> <li>Allows for control and prevention of veld fires through prescribed control measures</li> <li>Allows for control measures to be prescribed regarding the utilisation and protection of veld that has been burned</li> </ul>   | Addresses controlled burning, which directly impacts on ambient air quality  |
| Local Government Municipal Structures Act, 1988 (Act No. 117 of 1998) | <ul style="list-style-type: none"> <li>Establishes municipal categories</li> <li>Designates functions and powers of municipalities</li> </ul>   | Specifies that responsibility for integrated development planning, within which air quality management plans must reside, rests with district municipalities |
| National Veld and Forest Fires Act, 1988 (Act No. 101 of 1998)        | <ul style="list-style-type: none"> <li>Purpose is to combat and prevent veld, forest and mountain fires</li> <li>Fire Protection Agency can be designated for control and has power to conduct controlled burning with respect to conservation of ecosystems and reduction of fire danger</li> <li>Lighting, maintenance and using of fires is regulated</li> </ul>   | Addresses controlled burning, which directly impacts on ambient air quality  |
| National Water Act, 1998 (Act No. 36 of 1998)                         | <ul style="list-style-type: none"> <li>Establishes strategy to address management of water resources including protection and use of water</li> <li>Establishes management agencies</li> <li>Provides for pollution prevention and remediation, including land-based sources</li> <li>Addresses emergency incidents, including land-based pollutant sources</li> </ul>  | Pollution sources from land-based activities that impact on water resources  |
| Local Government Municipal Systems Act, 2000 (Act No. 32 of 2000)     | <ul style="list-style-type: none"> <li>Provides a framework for planning by local government</li> <li>Describes contents of an integrated development plan and the process to be followed</li> </ul>  | Air quality management plans are to be incorporated into integrated development plans  |
| Occupational Health and Safety Act, 1993 (Act No. 85 of 1993)         | <ul style="list-style-type: none"> <li>Provides for the health and safety of persons at work, including atmospheric emission from workplaces</li> <li>Sets out certain general duties of employers and to their employees</li> <li>Empowers the Minister of Labour to make regulations regarding various matters</li> <li>Further require any employer to ensure that their activities do not expose non-employees to health hazards</li> </ul> | The air emissions from the workplace environment has atmospheric quality implications  |

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| Legislation  | Air quality management links   | Relevance  |
|--|--|--|
| Promotion of Access to Information Act, 2000 (Act No. 2 of 2000)           | <ul style="list-style-type: none"> <li>Facilitates constitutional right of access to any information whether held by State or another person (if it is related to exercise or protection of a right)</li> <li>Details the means to access records, whether public or private</li> <li>Does not detract from provisions in the NEMA Section 1 and Section 2</li> <li>Allows for denial of access based on defence, security or international relations</li> </ul>   | Promotes access to information, including air quality information, although it has provisions for refusing access  |
| Promotion of Administrative Justice Act, 2000 (Act No. 3 of 2000)          | <ul style="list-style-type: none"> <li>Details the administrative procedure to be followed when carrying out an administrative action, and the process of review</li> </ul>  | Formal interactions between government departments, the public and other stakeholders by informing due process in decision-making  |
| International Trade Administration Act, 2002 (Act No. 71 of 2002)          | <ul style="list-style-type: none"> <li>Establishes the International Trade Administration Commission as an administrative body</li> <li>Regulates the import and export of controlled substances</li> </ul>  | Import and export control related to ozone-depleting substances through the declaration of controlled substance  |
| Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) | <ul style="list-style-type: none"> <li>States that environmental authorisation is required for obtaining prospecting and mining right.</li> <li>For environmental authorisations, scoping, EIA, specialist reports (including air quality specialist report), and EMP are needed. The Act states that it is necessary to submit an environmental management programme if applying for a mining right, and an environmental management plan if applying for reconnaissance permission</li> <li>The Minister is required to consult with any state department which administers any law relating to matters that affect the environment and must request the comments of that department on the environmental plan or programme being considered</li> <li>Provisions are made for monitoring and auditing of environmental performance</li> <li>Regulation 64 of MPRDA regulations stipulates that, the holder of a mining right or permit must comply with laws relating to air quality management and control</li> <li>Stockpiles require compliance monitoring and decommissioning</li> <li>Closure certificate authorisation is dependent on approval from other environmental departments that potential environmental impacts have been addressed</li> </ul> | Grants the decision-making power on matters potentially affecting the air environment to the Minister of Minerals and Energy in the case of mining activities but includes the obligation to comply with the AQA |
| National Health Act, 2003 (Act No. 61 of 2003)                             | <ul style="list-style-type: none"> <li>Makes reference to the performing of environmental pollution control by municipalities.</li> <li>Municipal health services are defined as including the responsibility for environmental pollution control</li> <li>The responsibility for municipal health services rests with metropolitan and district municipalities</li> <li>National and provincial departments of health have the duty to perform environmental pollution control</li> </ul>   | Air quality management falls within environmental pollution control  |

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| Legislation  | Air quality management links   | Relevance  |
|--|--|--|
| Intergovernmental Relations Framework Act, 2005 (Act No. 13 of 2005)   | <ul style="list-style-type: none"> <li>• Determines a framework to facilitate interaction and coordination, in the implementation of legislation, between spheres of government</li> <li>• Principles of participation, consultation and consideration are included</li> <li>• Establishes structures for coordination at different spheres of government</li> <li>• Establishes an implementation protocol mechanism as a tool for coordination</li> <li>• Provides mechanisms for conflict resolution, including the appointment of a facilitator</li> </ul>                                   | Provides mechanisms for coordination and conflict resolution across spheres of government in aspects of legislative implementation                     |
| National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008)                                      | <ul style="list-style-type: none"> <li>• Promotes cleaner technology, cleaner production and consumption practices for pollution minimisation</li> <li>• Addresses impacts of waste disposal on the environment, including air</li> <li>• Provides for numerous measures related to waste disposal including standards, integrated waste management planning, municipal waste management, priority wastes, licensing, waste management information system</li> </ul>   | Closely linked through issues of emissions to the air from thermal treatment activities and landfill sites   |
| Disaster Management Act, 2002 (Act No. 57 of 2002)   | <ul style="list-style-type: none"> <li>• Provides for the declaration of certain areas as disaster areas;</li> <li>• Disaster is defined as including the damage to the environment;</li> <li>• Provides for an integrated and co-ordinated disaster management policy that focuses on preventing or reducing the risk of disasters, mitigating the severity of disasters, emergency preparedness, rapid and effective response to disasters and post-disaster recovery;</li> <li>• Provides for the establishment of national, provincial and municipal disaster management centres.</li> </ul> | Certain air pollution episodes can be disastrous. Inversely, certain disasters result in air pollution.  |
| Accreditation for Conformity Assessment, Calibration and Good Laboratory Practice, 2006 (Act No. 19 of 2006) | <ul style="list-style-type: none"> <li>• Provides national and international recognition of the reliability of data produced by conformity assessment bodies involved in air quality management.</li> </ul>  | An accreditation service can be used to provide confidence to stakeholders regarding the reliability of data produced by conformity assessment bodies. |

### 2.3 Municipal by-laws

According to Section 156(2) of the Constitution of the Republic of South Africa, 1996, a municipality may make and administer by-laws for the effective administration of matters that it has the right to administer. Air pollution is listed as a matter in which local government has authority and national or provincial government may not compromise or impede a municipality's right to exercise its powers or perform its functions. Within this context, municipalities may develop by-laws that deal with air pollution. The Model Air Pollution Control By-laws have been developed and published by the Minister in on the 2<sup>nd</sup> of July 2010 (Gazette No. 3342; Notice 579). See paragraph 5.8.2 of this document.

### 2.4 International policy

South Africa has ratified several multilateral environmental agreements relating to air quality and is obligated to implement the conditions of these agreements.

South Africa's commitments in the international arena address three major air quality issues, namely, greenhouse gases and associated climate change; stratospheric ozone depletion and persistent organic pollutants (POPs).

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## 2.4.1 Greenhouse gases and climate change

2.4.1.1 *United Nations Framework Convention on Climate Change (UNFCCC)*

The United Nations Framework Convention on Climate Change (UNFCCC) provides the framework for addressing climate change as a global issue and was founded in 1992, and came into force in 1994. It provides a broad consensus for establishing institutions and practices to address climate change by introducing processes of on-going review, discussion and information exchange. The UNFCCC also differentiated between the responsibilities of developed and developing countries, by designating Annex 1 and Non-Annex 1 status, respectively, to parties to the convention. Developed countries have greater commitments as stated in Annex 4 of the Convention. The framework convention is expanded on through protocols, of which the Kyoto Protocol is the most recent and well recognised.

South Africa ratified the UNFCCC in August 1997, and is classified as a non-Annex 1 Party, or a developing country. South Africa has obligations as stated in Article 4 Paragraph 1 of the UNFCCC, including the preparation of the National Communication, which incorporates an inventory of greenhouse gases (GHGs).

During December 2015, countries across the globe committed to a new International Climate Agreement by the conclusion of the UNFCCC Conference of the Parties (COP21) in Paris. In preparation for this Agreement, countries had to agree to publicly outline what post-2020 climate actions they intend to take under a new international agreement, known as their Intended Nationally Determined Contributions (INDCs). The process for INDCs pairs national policy-setting — in which countries determine their contributions in the context of their national priorities, circumstances and capabilities — with a global framework that drives collective action toward a low-carbon and climate-resilient future. After the Paris Agreement, the INDCs have now become Nationally Determined Contributions (NDCs). Thus, countries are expected to implement what they have presented in their INDCs and periodic report on progress towards their implementation. South Africa's NDC reflects the country's ambition for reducing emissions, taking into account its domestic circumstances and capabilities.

2.4.1.2 *South Africa's UNFCCC obligations*

In terms of the provisions of the UNFCCC and the Kyoto Protocol, the Republic must:

- Prepare and periodically update a national inventory of greenhouse gas emissions and sinks.
- Formulate and implement national and, where appropriate, regional programmes to mitigate climate change and facilitate adequate adaptation to climate change.
- Promote and cooperate in the development, application and diffusion of technologies, practices and processes that control, reduce or prevent anthropogenic emissions of greenhouse gases.
- Implement the Nationally Determined Contributions (NDCs) to global GHG reductions and periodic report on progress towards its implementation

2.4.1.3 *South Africa's contributions to the global effort to reduce GHG emissions*

The Government of South Africa has published a National Climate Change Response White Paper (October 2011) that presents the Government's vision for an effective climate change response and the long-term, just transition to a climate-resilient and lower-carbon economy and society. The Policy has two objectives:

- To effectively manage inevitable climate change impacts through interventions that build and sustain South Africa's social, economic and environmental resilience and emergency response capacity; and
- To make a fair contribution to the global effort to stabilise greenhouse gas (GHG) concentrations in the atmosphere at a level that avoids dangerous anthropogenic interference with the climate system within a timeframe that enables economic, social and environmental development to proceed in a sustainable manner.

In addition to the policy and as a first step towards meeting its international obligations referred to Section 2.4.1.2 above, South Africa used the AQA to regulate greenhouse gas emissions. The following three instruments were promulgated:

*Declaration of GHGs as priority air pollutants*

The Minister declared following greenhouse gases as priority air pollutants and require a person falling within the category specified in this Notice to prepare and submit to the Minister a pollution prevention plan for approval, in terms of section 29(1) read with section 29(4) of the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004):

- Carbon dioxide (CO<sub>2</sub>);



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- Methane (CH<sub>4</sub>);
- Nitrous oxide (N<sub>2</sub>O);
- Hydrofluorocarbons (HFCs);
- Perfluorocarbons (PFCs); and
- Sulphur hexafluoride (SF<sub>6</sub>).

*National Pollution Prevention Plans Regulations*

The Minister made the National Pollution Prevention Plans Regulations, in terms of section 53(a), (o) and (p) read with section 29(3) of the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004). The purpose of these regulations is to prescribe the requirements that pollution prevention plans of greenhouse gases declared as priority air pollutants need to comply with in terms of section 29(3) of the Act. Implementation of these plans will help South Africa register its progress towards attainment of its emission reduction objective and tracking its NDC.

*National Greenhouse Gas Emission Reporting Regulations*

The minister has promulgated the National GHG reporting regulations in terms of section 53 (aA), (o) and (p) read with section 12 of AQA. The purpose of these Regulations is to introduce a single national reporting system for the transparent reporting of greenhouse gas emissions, which will primarily be used to:

- Inform policy formulation, implementation and legislation;
- Enable the Republic of South Africa to meet its reporting obligations under the United Framework Convention on Climate Change (UNFCCC) and instrument treaties to which it is bound; and
- Establish and maintain a National GHG emissions inventory.

## 2.4.2 Stratospheric ozone depletion

2.4.2.1 *The Vienna Convention for the Protection of the Ozone Layer*

The Vienna Convention was agreed upon in 1985, with countries expressing commitment to conduct research and share information on stratospheric ozone depletion. The convention focused on the protection of human health and the environment from adverse effects resulting from anthropogenic influences on ozone destruction. Chemicals responsible for ozone destruction were also identified and monitored. The convention provided the framework for a binding agreement on addressing ozone depletion. The convention is also viewed as significant as it demonstrates the cooperation of international governments to address a global environmental issue. South Africa acceded to the convention in January 1990.

2.4.2.2 *The Montreal Protocol on Substances that deplete the Ozone Layer*

The Montreal Protocol was signed in September 1987 as a means of addressing the production, supply and use of ozone-depleting substances (ODS). It puts in place procedures for the phasing out of ODS such as chlorofluorocarbons and halons. The schedules for phase-out and obligations take cognisance of developed and developing country status, designated as Article 5 and non-Article 5 parties respectively. The protocol was significantly amended in 1990 (London Amendment) and 1992 (Copenhagen Amendment), with further amendments made in 1997 (Montreal Amendment) and 1999 (Beijing Amendment). The amendments served to include additional obligations and additional ozone-depleting substances, such as methyl bromide, hydrochlorofluorocarbons (HCFCs) and methyl chloroform, and also to tighten schedules of compliance.

South Africa has ratified the protocol in January 1990, and acceded to all the amendments. South Africa is currently in full compliance with the conditions of the protocol.

*Obligations*

Parties are required to reduce or eliminate/ban the consumption of ozone depleting substances (ODS) identified in the Protocol. (Consumption is defined as production plus imports minus exports of controlled substances).

*Trade measures*

- Parties are required to ban the import and export of controlled substances, as well as of products relying on the use of these substances, from and to States not party to the Protocol;
- Parties are to implement a licensing system for the import and export of new, used, recycled or reclaimed controlled

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substances, from and to other Parties to the Protocol;

- Parties are to implement measures to control the import and export of products and equipment relying on the use of controlled substances, from and to other Parties to the Protocol;
- Ban the import of HCFCs from non-parties, starting January 1, 2004; and
- Ban on trade in bromochloromethane with non-parties as of January 1, 2001.

#### Reporting

Parties are to provide annual statistical data to the Secretariat of the Protocol on their production and consumption of controlled substances, as well as on their imports and exports of controlled substances. Production is defined as total production minus amounts destroyed or used as chemical feedstock. Consumption is defined as production plus imports minus exports. Trade in recycled and used chemicals is not included in the calculation of consumption in order to encourage recovery, reclamation and recycling.

#### South Africa's contribution to the Montreal protocol

South Africa does not produce the ODSs but only imports them into the country. The Department of Environmental Affairs (DEA) as the focal point for the implementation of the Montreal Protocol on substances that deplete the ozone layer. In fulfilling South Africa's obligations to the Montreal Protocol, the Minister of Environmental affairs promulgated the Regulations Regarding the Phasing-out and Management of Ozone Depleting Substances were promulgated on 8<sup>th</sup> May 2014. The Regulations provide for the banning, phase-out schedules/milestones of ODSs. The types of ODS that are typically consumed in South Africa includes HCFC 222 use in in refrigeration, HCFC 141b used in used in rigid and integral skin polyurethane foam, HCFC 142b used in manufacturing extruded polystyrene and Methyl bromine used in agricultural goods.

The management of the ODSs in South Africa is done by DEA in collaboration with South African Revenue Services (SARS), International Trade Administration Commission (ITAC), Department of Agriculture Forestry and Fisheries (DAFF) with regular engagements with industry stakeholders that deal with ozone depleting substances. Any company that wish to Import ODSs into the country must apply to the DEA for a recommendation. After considering the quota allocated to that particular company, DEA then recommends to ITAC for the issuance of the Permit to import such chemical. It is through the quota allocation system that ODS are being managed and gradually phased out as required by the Montreal Protocol.

#### 2.4.2.3 Obligations for South Africa according to the Vienna Convention and Montreal Protocol related to air quality

South Africa's phase out obligations are summarised in Table 3: Typical AQA governance functions relating to information management. Table 3 below:

Table 3: Phase out schedule for South Africa

| Substance                    | South Africa       |   |
|------------------------------|--------------------|---|
|                              | Consumption Freeze | Phase Out   |
| Chlorofluorocarbons (CFC)    | 01 July 1999       | 01 January 2010 (with possible essential-use exemption) |
| Halons                       | 01 January 2002    | 01 January 2010 (with possible essential-use exemption) |
| Other Fully Halogenated CFCs | -                  | 01 January 2010 (with possible essential-use exemption) |
| Carbon Tetrachloride         | -                  | 01 January 2010 (with possible essential-use exemption) |
| Methyl Chloroform            | 01 January 2003    | 01 January 2015 (with possible essential-use exemption) |

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|                                  |                 |   |
|----------------------------------|-----------------|---|
| Hydrochlorofluorocarbons (HCFCs) | 01 January 2013 | 97.5 % HCFC phase-out by 01 January 2030 and thereafter, consumption restricted to the servicing of refrigeration and air conditioning equipment existing at that date.<br><br>100% HCFC reduction by January 1, 2040 |
| Methyl Bromide                   | 01 January 2002 | 01 January 2015 (with possible essential-use exemption)   |
| Bromochloromethane (BCM)         | -               | 01 January 2002 (with possible essential-use exemption)   |
| Bromodifluoromethane (HBFCs)     | -               | 1 January 1996 (with possible essential-use exemptions).  |

## 2.4.3 Persistent pollutants

2.4.3.1 *The Stockholm Convention on Persistent Organic Pollutants (POPs)*

The Stockholm Convention was signed in May 2001, and came into force in May 2004. The Convention is intended to address the production and use, or banning, of POPs for the protection of human health and the environment. Twelve pollutants are considered in the convention, including pesticides such as dichlorodiphenyltrichloroethane (DDT), industrial chemicals of hexachlorobenzene and polychlorinated biphenyls, and unintended by-products including dioxins and furans. Intentionally produced POPs are targeted for reduction and elimination, and unintentional production requires feasible elimination. The management and disposal of stockpiles of obsolete chemicals are also addressed. Trade restrictions are included in the convention. Reporting processes, implementation plans and information provision measures are also included in the convention.

South Africa ratified the convention in 2002, and it came into force in 2004. DDT is still in use in the country despite the provisions of the convention, as sufficient epidemiological evidence has been provided to motivate its continued use in the control of malaria vectors. The use of the chemical is monitored through a reporting structure. A National Implementation Plan (NIP) for the Convention was approved and published by the Minister of Water and Environmental Affairs in September 2012 and was submitted to the Convention Secretariat. The NIP requires monitoring and reporting of the Dioxins and Furans for priority areas in the South African Environment Outlook. The Africa Stockpiles Programme is also a significant measure as funds are provided by developed countries for the safe disposal of POPs and contaminated soil.

2.4.3.2 *International concerns around Mercury, Lead and Cadmium*

The United Nation Environmental Programme (UNEP) a globally legally binding instrument on mercury under the Minamata Convention. The aim of the instrument is to minimise the effects of mercury to humans and environment with the goal of eliminating anthropogenic mercury release and production where feasible. Based on the advanced text, the convention addresses the following mercury issues:

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- Mercury supplies
- International trade in mercury (and mercury products)
- Mercury products and processes
- Mercury in artisanal small-scale gold mining
- Mercury emissions and releases into the environment
- Storage, waste and contaminated sites
- Financial resources and technical and implementation assistance
- Awareness raising, research and monitoring, and communication of information

South Africa has signed (but not ratified) the Minamata Convention text in Japan, 2013. The country is currently completing a Cost-Benefit Analysis to find out what will be the socio-economic implications for South Africa if it ratifies the Minamata Convention on mercury for all affected sectors and industries.

With regard to Lead and Cadmium, UNEP have been working to address these pollutants since 2003. UNEP has identified priorities for action in connection with lead and cadmium. These priorities include the push to eliminate leaded paints and fuels and the promotion of environmentally sound management throughout the life cycle of lead and cadmium batteries. South Africa has already phased out leaded fuels but will monitor developments in this field in the future.

#### 2.4.4 Regional policy

Southern Africa has made progress toward developing environmental management policy across the region, including initiatives through the New Partnership for Africa's Development (NEPAD) and the Southern African Development Community (SADC).

#### 2.4.5 The AQA and International Policy

The AQA contains a number of direct and indirect references to "the Republic's obligations in terms of international agreements". South Africa's membership of the "global community" is recognised in the preamble to the AQA as follows "...atmospheric emissions of ozone-depleting substances, greenhouse gases and other substances have deleterious effects on the environment both locally and globally". Furthermore, greenhouse gases are captured in the definitions section of AQA.

The AQA also includes a number of direct references and provisions regarding South Africa's commitments in respect of air quality related multilateral environmental agreements as illustrated in the following -

- *The National Framework* - In terms of section 7(1) of AQA, the Minister must establish a national framework for achieving the objectives of the Act and this framework must include, among others, mechanisms, systems and procedures to give effect to "the Republic's obligations in terms of international agreements" (Section 7(1) (b)). Furthermore, the national norms and standards established by the national framework must be aimed at ensuring "compliance with the Republic's obligations in terms of international agreements" (Section 7(2) (h)).
- *National monitoring and information management standards* - In terms of section 8(c) of AQA, the national framework must establish national standards for, among others, the collection and management of data necessary to "assess compliance with the Republic's obligations in terms of international agreements" (Section 8(c) (v)).
- *Air Quality Management Plans* - In terms of section 16(1) (a) of AQA, air quality management plans must, among others, seek to implement the Republic's obligations in respect of international agreements (Section 16(1) (a) (vii)).
- *Controlled Emitters* - In terms of section 23(2) of the AQA, in declaring a controlled emitter the Minister or MEC must, among others, "take into account the Republic's obligations in terms of any applicable international agreement" (Section 23(2)(c)).
- *Controlled Fuels* - In terms of section 26(2) of the AQA, in declaring a controlled fuel the Minister or MEC must, among others, "take into account the Republic's obligations in terms of any applicable international agreement" (S.26(2)(c)).
- *International Air Quality Management* - The AQA contains an entire chapter dedicated to international air quality management, namely, Chapter 6. It deals with air pollution that has impacts outside of our borders, as well as with contraventions of multilateral environmental agreements that address environmental pollution. It makes provision

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for the investigation of offences, or possible offences, and the passing of regulations to address the air quality impacts.

- *Greenhouse Gas Emission Monitoring* - Section 43 of the AQA requires an atmospheric emission licence to specify, among others, greenhouse gas emission measurement and reporting requirements (Section 43(1) (l)).
- *Regulations* - Section 53 of the AQA empowers the Minister to make regulations regarding, among others, "any matter necessary to give effect to the Republic's obligations in terms of an international agreement relating to air quality ..." (Section 53(a)). Furthermore, these regulations may "incorporate, by reference, any code of practice or any national or international standard relating to air quality" (Section 55(1) (d)).

### 3. ROLES AND RESPONSIBILITIES FOR AIR QUALITY MANAGEMENT

#### 3.1 Introduction

Everyone, to a greater or lesser extent, is responsible for some form of atmospheric emission that has an impact on air quality. Hence, everyone has a role and various responsibilities in respect of air quality management as the following illustrates.

#### 3.2 Government's roles and responsibilities

The role of government is, according to Section 24 of the Constitution of the Republic of South Africa, 1996, to use legislative and other means to improve air quality and progressively ensure that ambient air is not harmful to health and well-being. Specific government's roles and responsibilities are clearly spelt out in various government policies and legislation (see Chapter 2 in this document). However, these roles and responsibilities differ across departments and spheres of government

In this regard, departments and spheres of government with specific air quality management mandates, including the Department of Environmental Affairs, the provincial environmental management departments and all municipalities, exercise their roles and functions by implementing the governance cycle described in Chapter 4 of this document. The relationships between different spheres of government in terms of air quality roles and responsibilities should be as stipulated in The Constitution of the Republic South Africa, 1996.

These differing roles and responsibilities are summarised in the following paragraphs.

##### 3.2.1 The National Department of Environmental Affairs (DEA)

The Department of Environmental Affairs (DEA) is the national Lead Agent for environmental management, and hence air quality management, and must therefore provide national norms and standards to ensure coordinated, integrated and cohesive air quality governance.

To this end, the AQA provides for a number of DEA responsibilities within the governance cycle, which is described in Chapter 4. The Minister responsible for Environmental Affairs has a number of exclusive air quality management responsibilities as summarised below:

In this regard, the Minister must:

- Establish the National Framework that must include the items specified in Paragraph 1.2.
- Designate an officer in the Department as the national air quality officer to be responsible for coordinating matters pertaining to air quality management in national government (Section 14(1) of the AQA).
- Identify substances or mixtures of substances in ambient air which, through ambient concentrations, bioaccumulation, deposition or in any other way, present a threat to health or well-being of the environment, or which the Minister reasonably believes present such a threat, and the subsequent establishment of national standards for ambient air quality for these substances (See Paragraphs 5.2.3.4 and 5.4.3.2 on problem identification and prioritisation and ambient air quality standards), and the establishment of national emission standards from point and non-point sources for these substances or mixture of substances (See

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Paragraphs 5.4.3.3 on Listed Activities and emission standards).

- Prescribe the manner in which ambient air quality measurements must be carried out and reported and the manner in which measurements of emissions from point and non-point sources are carried out and reported (See Paragraphs 0 and 5.2.3 on ambient air quality monitoring and air quality reporting).
- Assume the role of a Licensing Authorities in terms of section 36(5) of AQA.
- Preparing a national air quality management plan (AQMP) (See Paragraph 5.4.5, on air quality management planning), and preparing an annual report providing information on progress regarding the implementation of the AQMP.
- Publish and maintain a national list of activities which result in atmospheric emissions and which the Minister reasonably believes have a detrimental effect on the environment, including health, social, economic and ecological conditions, or cultural heritage, and for establishing minimum emission standards in respect of a substances or mixture of substances resulting from the Listed Activity (See Paragraph 5.4.3.3, page 58, on Listed Activities).
- Execute the overarching auditing function to ensure that adequate ambient and compliance monitoring occurs nationally.
- Enforce compliance with the AQA, the National Framework and any other relevant legislation.
- Review the impact on air quality of all government policies, strategies, plans, programmes and actions and ensuring that they conform to any other relevant legislation.
- Ensure that air quality information is accessible to all stakeholders (See Paragraph 5.2.1, page 38, on SAAQIS).

The Minister may also:

- Establish a national Air Quality Advisory Committee to advise the Minister on the implementation of AQA.
- Declare an area a national Priority Area if the Minister reasonably believed that ambient air quality standards are being exceeded or are likely to be exceeded, or the area requires specific air quality management action to rectify the situation (See Paragraph 5.4.6.5 on priority area air quality management planning).
- Prescribe the regulations necessary for implementing and enforcing the approved Priority Area AQMP (See Paragraph 5.4.4, page 67, on regulations).
- Declare an appliance or activity as a Controlled Emitter if that appliance or activity results in atmospheric emissions which through ambient concentrations, bioaccumulation, deposition or in any other way, presents a threat to health or well-being or the environment, or which the Minister reasonably believes present such a threat (See Paragraph 5.4.3.5, page 64, on Controlled Emitters).
- Declare a substance or a mixture of substances, which when used as a fuel in a combustion process, results in atmospheric emissions which through ambient concentrations, bioaccumulation, deposition or in any other way, present a threat to health or well-being or the environment, or which the Minister reasonably believes presents such a threat, as a Controlled Fuel (See Paragraph 5.4.3.6, page 66, on Controlled Fuels).
- Declare any substance contributing to air pollution as a priority air pollutant (See Paragraph 5.3.2 on identifying and prioritising pollutants of concern).
- Investigate situations which create, or are anticipated to contribute to air pollution across the Republic's borders, or air pollution that violates, or is likely to violate, an international agreement binding on the Republic in relation to the prevention, control or correction of pollution and for prescribing measures to prevent, control or correct the emissions within the Republic in consultation with the Cabinet member responsible for foreign affairs.
- Prescribe measures for the control of dust, noise and offensive odours (See Paragraph 5.5.3.6, page 76).
- Carry out atmospheric emission licensing functions in terms of section 36(f), (g) and (3B)
- Issue an integrated environmental authorisation for activities identified in section 24(2) of NEMA and section 19(1) of NEM: Waste Act.
- Make regulations regarding any matter necessary to give effect to the Republic's obligations and information

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relating to energy that is required for compiling atmospheric emission reports.

### 3.2.2 Provincial environmental departments

Provincial environmental departments are the provincial Lead Agents for environmental management, and hence air quality management, in each province and must therefore provide, where necessary, provincial norms and standards to ensure coordinated, integrated and cohesive air quality governance in the province.

As with the national department, provincial departments have a number of responsibilities within the governance cycle which is described in Chapter 4 of this document. However, each provincial Member of the Executive Committee (MEC) responsible for the environment has a number of exclusive air quality management powers as summarised below:

In this regard, the MEC must:

- Designate an officer in the provincial administration as the provincial Air Quality Officer (AQO) who is responsible for the coordination of all air quality related matters in the province.
- Prepare a provincial AQMP as a component of the EIP (See Paragraph 5.4.6.6).
- Prepare an annual report providing information on progress regarding the implementation of the AQMP and compliance with the provincial implementation plan.
- Process an application for an Atmospheric Emission Licence (AEL) if the applicant is a municipality in the province.
- Review the AQMPs received from the municipalities.

The MEC may also:

- Identify substances or mixtures of substances in ambient air which, through ambient concentrations, bioaccumulation, deposition or any other way, present a threat to health or well-being or the environment, or which the MEC reasonably believes present such a threat, and the subsequent establishment of provincial standards for ambient air quality for these substances, and the establishment of provincial emission standards from point and non-point sources for these substances or mixture of substances if national standards are not sufficiently strict (See problem identification and prioritisation in Paragraph 5.2.3.4).
- Declare an area as a provincial Priority Area if the MEC reasonably believes that ambient air quality standards are being exceeded or are likely to be exceeded, or the area requires specific air quality management action to rectify the situation.
- Prepare an AQMP for the area in consultation with the AQOs in the affected municipalities (See Paragraph 5.4.6.5), and presenting this plan to the MEC within a stipulated time frame.
- Prescribe the regulations necessary for implementing and enforcing the approved Priority Area AQMP.
- Publish and maintain a provincial list of activities which result in atmospheric emissions and which the MEC reasonably believes have a detrimental effect on the environment, including health, social, economic and ecological conditions, or cultural heritage.
- Establish minimum emission standards in respect of a substance or mixture of substances resulting from the Listed Activity if implementing national standards does not achieve the desired improvement in ambient air quality in the province.
- Declare an appliance or activity as a Controlled Emitter if that appliance or activity results in atmospheric emissions which through ambient concentrations, bioaccumulation, deposition or in any other way, presents a threat to health or well-being or the environment, or which the MEC reasonably believes presents such a threat.
- Declare a substance or a mixture of substances, which when used as a fuel in a combustion process, results in atmospheric emissions which through ambient concentrations, bioaccumulation, deposition or in any other way, presents a threat to health or well-being or the environment, or which the MEC reasonably believes presents such

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a threat, as a Controlled Fuel.

- Declare any substance contributing to air pollution as a provincial priority air pollutant.
- Prescribing measures for the control of dust, noise and offensive odours in the province.
- Establish a programme of public recognition of significant achievement in air pollution prevention in the province.

### 3.2.3 Municipalities

As with the national department and the provincial departments, municipalities have a number of responsibilities within the governance cycle which is described in Chapter 4 of this document. However, each municipality has a number of exclusive air quality management powers as summarised below:

In this regard, the municipality must:

- Designate a municipal AQO from its administration.
- Develop an AQMP for inclusion in its Integrated Development Plan (IDP) in accordance with Chapter 5 of the Municipal Systems Act (See air quality management planning in Paragraph 5.4.6.7, page 72).
- Prepare an annual report including progress regarding the implementation of the AQMP and compliance with the plan.
- Enforce and ensure compliance with the requirements of the regulations developed in terms of the AQA

The municipality may also:

- Establish municipal standards for emissions from point, non-point and mobile sources if a municipality, in terms of its by-laws, identifies a substance or mixture of substances in ambient air which through ambient concentrations, bioaccumulation, deposition or any other way, presents a threat to health or well-being or the environment, or which the municipality reasonably believes presents such a threat.
- Require the appointment of an Emission Control Officer in a given company (Section 48 of AQA), thereby extending the powers of the authority by ensuring that the Emission Control Officer is responsible for the company applying the correct measures to minimise emissions.

In addition, Metropolitan and District Municipalities must:

- Implement the atmospheric emission licensing system, and carry out the responsibility for performing the functions of the licensing authority as set out in Chapter 5 of the AQA.

Note: When appointing and designating air quality officers in terms of Section 14 (1) to (3) of the AQA, all spheres of government must ensure that the person designated is of the calibre and academic qualifications that will enable him/her to perform the duties of the AQO which include among others:

- Coordination of matters of air quality within his/her jurisdiction;
- Ensuring representation in meetings with other government officials, industry, NGOs, and other stakeholders;
- Providing input and making decisions on behalf of his/her department on air quality matters at various air quality forums;
- Work with Environmental Management Inspectors on AQA matters;
- Input into the national atmospheric emissions inventory
- Reporting on the state of air;
- Reporting on implementation of AQMP for the jurisdiction; etc.

### 3.2.4 Other national departments

There are a number of national departments that, within their various jurisdictions, have an impact on air quality and, hence, have an interest or responsibilities in respect of managing atmospheric emissions within their jurisdictions as summarised in Table 2 below.



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Table 2: National departments, other than DEA, that have an interest or responsibilities in respect of managing atmospheric emissions within their jurisdictions

| National departments, other than DEA, that have an interest or responsibilities in respect of managing atmospheric emissions within their jurisdictions |  |
|---|--|
| National Department   | Examples of interest or responsibility   |
| Department of Energy (DoE)  | <ul style="list-style-type: none"> <li>Emissions resulting from the use of fossil fuels;</li> </ul>  |
| Department of Mineral Resources (DMR)   | <ul style="list-style-type: none"> <li>Emissions from mining haul roads;</li> <li>Dust from mine spoil tailings dumps and other mining operations;</li> <li>Dust from open-cast mining operations;</li> <li>Emissions from fires in coal mines, including abandoned mines.</li> </ul>  |
| Department of Health (DoH)  | <ul style="list-style-type: none"> <li>Household fuel burning;</li> <li>Emissions from household products;</li> <li>Emissions from building materials, furniture, floor coverings, adhesives, etc.;</li> <li>Emissions from medical waste treatment plants;</li> <li>Emissions from hospital boilers.</li> </ul>   |
| Department of Agriculture, Forestry and Fisheries (DAFF)  | <ul style="list-style-type: none"> <li>Dust from agricultural activities (e.g. ploughing);</li> <li>Emissions from stubble burning;</li> <li>Emissions from sugar cane burning;</li> <li>Emissions from un-surfaced farm roads;</li> <li>Emissions from crop-spraying;</li> <li>Emissions from the burning of fire breaks;</li> <li>The impact of emissions on soil quality (e.g. acidification).</li> <li>Emissions from veld and forest fires;</li> <li>Emissions sinks (e.g. forests as carbon sinks);</li> </ul> |
| Department of Labour (DoL)  | <ul style="list-style-type: none"> <li>Emissions within the workplace.</li> </ul>  |
| Department of Water Affairs (DWA)   | <ul style="list-style-type: none"> <li>The impact of emissions on water quality (e.g. acidification).</li> </ul>   |
| Department of Transport (DoT)   | <ul style="list-style-type: none"> <li>Emissions from various forms of transport (road, rail, aviation and maritime)</li> <li>Emissions from transport infrastructure construction.</li> </ul>   |
| Department of Rural Development and Land Reform (DRDLR)   | <ul style="list-style-type: none"> <li>Emissions from various changes in land-use (e.g. the change from virgin to agricultural land)</li> </ul>  |
| Department of Cooperative Governance (DCG)  | <ul style="list-style-type: none"> <li>Emissions from national disasters where such emissions occur.</li> </ul>  |
| Department of Human Settlements (DHS)   | <ul style="list-style-type: none"> <li>Emission from coal and wood burning, especially in dense, low-income communities.</li> </ul>  |
| Department of Defence (DoD)   | <ul style="list-style-type: none"> <li>Emissions from the use and/or testing of explosives and other weapons.</li> </ul>   |
| Department of Public Enterprises (DPE)  | <ul style="list-style-type: none"> <li>Emissions from State-owned enterprises.</li> </ul>  |
| Department of Trade and Industry (DTI)  | <ul style="list-style-type: none"> <li>Emissions resulting from technology choices.</li> </ul>   |
| Department of Science and Technology (DST)  | <ul style="list-style-type: none"> <li>Development and deployment of technologies to curb emissions and associated research activities.</li> <li>National Global Change Research and related activities</li> </ul>   |

With regard to specific air quality management responsibilities, national departments that are responsible for preparing an Environmental Implementation Plan (EIP) or Environmental Management Plan (EMP) in terms of Chapter 3 of the NEMA are responsible for:

- Including an AQMP in their respective plans (See Paragraph 5.4.6 on air quality management planning).
- Preparing an annual report providing information on progress regarding the implementation of its AQMP.

### 3.3 INDUSTRY

Emissions from some industries often have a measurable impact on air quality. In this regard, industry too has a responsibility not to impinge on everyone's right to air that is not harmful to health and well-being. Furthermore, in terms of section 28 of the NEMA, industries that cause, have caused or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or

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recurring, or, in so far as such harm to the environment is authorised by law or cannot reasonably be avoided or stopped, to minimise and rectify such pollution or degradation of the environment.

In terms of the AQA, certain industries have further responsibilities, including:

- Taking reasonable steps to prevent the emission of any offensive odour caused by any activity on their premises.
- Take reasonable and effective steps to control dust from their activities
- Compliance with any relevant standards for emissions from point, non-point or mobile sources in respect of substances or mixtures of substances identified by the Minister, MEC or municipality.
- Compliance with the measurements requirements of identified emissions from point, non-point or mobile sources and the form in which such measurements must be reported and the organs of state to whom such measurements must be reported.
- Compliance with relevant emission standards in respect of controlled emitters if an activity undertaken by the industry and/or an appliance used by the industry is identified as a controlled emitter.
- Compliance with any usage, manufacture or sale and/or emissions standards or prohibitions in respect of controlled fuels if such fuels are manufactured, sold or used by the industry.
- Comply with the Minister's requirement for the implementation of a pollution prevention plan in respect of a substance declared as a priority air pollutant.
- Comply with an Air Quality Officer's legal request to submit an atmospheric impact report in a prescribed form.
- Comply with the requirements of the regulations on emissions reporting developed in terms of section 12 of AQA

Furthermore, industries identified as Listed Activities (See Paragraph 5.4.3.3) have further responsibilities, including:

- Making application for an Atmospheric Emission Licence (AEL) and complying with its provisions.
- Compliance with any minimum emission standards in respect of a substance or mixture of substances identified as resulting from a listed activity.
- Designate an Emission Control Officer if required to do so.
- Comply with a licensing officer's directive as contemplated in section 22A (4)(a) – (g) and sub section (7)

### 3.4 Labour

Workers tend to be in the frontline of pollution problems and exposure to hazardous environments. Recognising this, the NEMA protects workers refusing to do environmentally hazardous work by providing that no person is civilly or criminally liable or may be dismissed, disciplined, prejudiced or harassed on account of having refused to perform any work if the person in good faith and reasonably believed at the time of the refusal that the performance of the work would result in an imminent and serious threat to the environment. Furthermore, the NEMA also protects 'whistle-blowers' by providing that no person is civilly or criminally liable or may be dismissed, disciplined, prejudiced or harassed on account of having disclosed any information, if the person in good faith reasonably believed at the time of the disclosure that he or she was disclosing evidence of an environmental risk and the disclosure was made in accordance with certain provisions.

### 3.5 The general public

As mentioned in the introduction, everyone, to a greater or lesser extent, is responsible for some form of atmospheric emission that has an impact on air quality. Hence, everyone has a role and social responsibility in respect of air quality management. As private individuals, we all have a responsibility not to impinge on everyone's right to air that is not harmful to health and well-being. As with industries, in terms of section 28 of the NEMA, persons that cause, have caused or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring, or, in so far as such harm to the environment is authorised by law or cannot reasonably be avoided or stopped, to minimise and rectify such pollution or degradation of the environment.

Notwithstanding the above, it can be argued that there is a social responsibility for everyone to actively participate in air quality governance by participating in the development of the regulatory framework for air quality management. In this regard, the AQA provides numerous opportunities to submit to the Minister or MEC written or oral representations on or objections in respect of, for example:

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- The National Framework or any amendment to the framework.
- Ambient air quality standards.
- The declaration of priority areas Priority area air quality management plans.
- The listing of activities that require and Atmospheric Emission Licence to operate.
- The declaration of controlled emitters.
- The declaration of controlled fuels.
- Any regulation.

Finally, the public may be directly affected by air pollution. The public and civil society groups therefore contribute local perspectives and also have an important watchdog role to play in bringing to the attention of the authorities through their municipal AOO, matters of concern or of non-compliance.

## 4. APPROACH TO AIR QUALITY GOVERNANCE

### 4.1 Introduction

Air quality governance can be described in terms of a simplified environmental governance cycle as illustrated in Figure 1. The governance cycle provides a useful framework for achieving continuous improvement over time. An overview of each of the components with reference to the governance roles and responsibilities contained in, or implied by, the AQA is given in Paragraph 4.2.

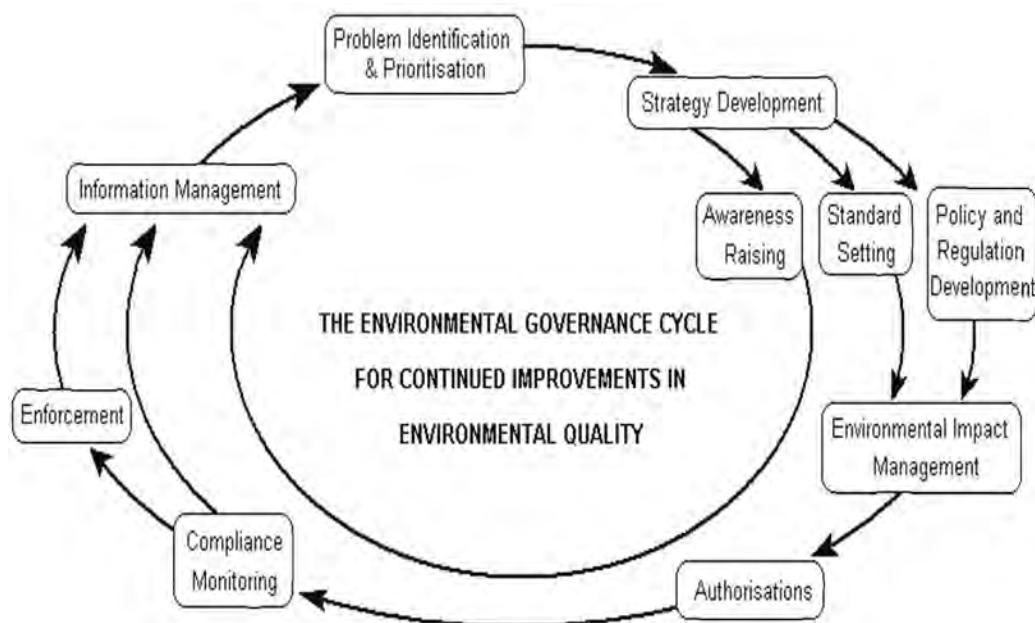


Figure 1: The environmental governance cycle for continued improvements in environmental quality

## 4.2 The environmental governance cycle

### 4.2.1 Information management

Informed decision-making is fundamental to good governance and decisions can only be informed if decision-shapers and decision-makers have ready access to accurate, relevant, current and complete information. The information management component of the governance cycle is critical and is often described as the engine that drives the cycle towards continuous improvements in environmental quality.

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Given the above, the AQA contains a number of information related provisions as illustrated in Table 3.

Table 3: Typical AQA governance functions relating to information management

| Typical AQA governance functions relating to information management   |             |   |       |                |       |                     |
|---|-------------|---|-------|----------------|-------|---------------------|
| Function  | AQA Ref.    | DEA   | Prov. | Municipalities |       |                     |
|   |             |   |       | Metro          | Dist. | Local               |
| Establish and maintain national norms and standards for air quality monitoring  | 7(1)(d)     | PR  | I     | I              | I     | I                   |
| Establish and maintain national norms and standards for air quality information management  | 7(1)(f)     | PR  | I     | I              | I     | I                   |
| Monitor ambient air quality and point, non-point and mobile source emissions  | 8(a)        | O   | O     | PR             | PR    | PR                  |
| Monitor ambient air quality and the performance of municipalities in implementing the AQA   | 8(b)        | O   | PR    | I              | I     | I                   |
| Establish and maintain national standards for the collection and management of data necessary to assess: (i) compliance with the AQA; (ii) compliance with ambient air quality and emission standards; (iii) the performance of organs of state in respect of air quality management plans and priority area air quality management plans; (iv) the impact of, and compliance with, air quality management plans and priority area air quality management plans; (v) compliance with the Republic's obligations in terms of international agreements; and (vi) access to information by the public. | 8(c)        | PR  | I     | I              | I     | I                   |
| The compilation and submission of an annual report including information on - (a) air quality management initiatives undertaken during the reporting period; (b) the level of compliance with ambient air quality standards; (c) measures taken by to secure compliance with those standards; (d) compliance with any applicable priority area air quality management plans; and (e) air quality monitoring activities.   | 17          | PR  | PR    | I              | I     | I                   |
| The consideration of any sound scientific information in the declaration of a controlled emitter  | 23(2)(d)(i) | PR  | PR    | I              | I     | I                   |
| The consideration of any sound scientific information in the declaration of a controlled fuel   | 26(2)(d)(i) | PR  | PR    | I              | I     | I                   |
| The development of regulations in respect of monitoring   | 53(m)       | PR  | PR    | I              | I     | I                   |
| The development of regulations with respect to emissions measurements and reporting   | 12(b)(c)    | PR  | I     | I              | I     | I                   |
| Review emissions reports provided by industry in the NAEIS in line with AEL   |             | PR  | PR    | PR             | PR    | I                   |
|   |             |   |       |                |       |                     |
|   |             |   |       |                |       |                     |
| Key:  | PR          | Principle Responsibility in relevant jurisdiction | I     | Input          | O     | Oversight & support |

The functions of the South African Weather Service (SAWS) in ambient air quality monitoring, as prescribed in the South African Weather Service Act of 2001, as amended are to:

| Typical SAWS functions relating to information management   |                           |     |      |                |              |       |
|---|---------------------------|-----|------|----------------|--------------|-------|
| Function  | SAWS Act, as Amended Ref. | DEA | SAWS | Municipalities |              |       |
|   |                           |     |      | PRO            | Metro/ Dist. | Local |
| Provide such ambient air quality information services as is necessary to achieve the objectives of the Air Quality Act. | 4(aA)                     | O   | PR   | I              | I            | I     |
| Collect ambient air quality information data over the Republic of South Africa  | 4(aB)                     | O   | PR   | I              | I            | I     |

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| Typical SAWS functions relating to information management  |                           |     |      |                |              |       |
|--|---------------------------|-----|------|----------------|--------------|-------|
| Function   | SAWS Act, as Amended Ref. | DEA | SAWS | Municipalities |              |       |
|  |                           |     |      | PRO            | Metro/ Dist. | Local |
| Act as the custodian of the SAAQIS   | 4(aC)                     | O   | PR   | I              | I            | I     |
| Manage, operate, maintain and develop NAAQMN   | 4(aD)                     | O   | PR   | I              | I            | I     |
| The Weather Service may issue ambient air quality forecasting  | 4(b) 5                    | O   | PR   | I              | I            | I     |
| The Weather Service may issue air quality warning<br>Before issuing ambient air quality warnings, the Weather Service must –<br>Inform the Minister<br>Provide the Minister with all relevant information pertaining to the ambient air quality warning<br>Afford the Minister a reasonable opportunity to consult with relevant Ministers or any other stakeholder whose area of responsibility may be affected by the air quality warning. | 4(b) 6 & 7                | O   | PR   | I              | I            | I     |

|      |    |   |   |       |   |                     |
|------|----|---|---|-------|---|---------------------|
| Key: | PR | Principle Responsibility in relevant jurisdiction | I | Input | O | Oversight & support |
|------|----|---|---|-------|---|---------------------|

## 4.2.2 Problem identification and prioritisation

Information and information management is not an end in itself. The gathering, storage and reporting of information is to no avail unless it is used for a purpose. Information must be analysed to identify air quality problems being experienced and also to establish whether air quality interventions are effective. AQA will not provide a solution to air quality problems in South Africa unless these problems are identified and defined and prioritised for action.

There are a number of sections in the AQA that deal with problem identification and prioritisation, including, those provided in Table 4.

Table 4: Typical AQA governance functions relating to problem identification and prioritisation

| Typical AQA governance functions relating to problem identification and prioritisation   |            |     |       |                |       |       |
|--|------------|-----|-------|----------------|-------|-------|
| Function   | AQA Ref.   | DEA | Prov. | Municipalities |       |       |
|  |            |     |       | Metro          | Dist. | Local |
| The identification of pollutants which, through ambient concentrations, bioaccumulation, deposition or in any other way, present a threat to health, well-being or the environment   | S.9(1)(a)  | PR  | PR    | I              | I     | I     |
| The declaration of an area as a priority area if ambient air quality standards are being, or may be, exceeded in the area, or any other situation exists which is causing, or may cause, a significant negative impact on air quality in the area; and the area requires specific air quality management action to rectify the situation   | S.18(1)    | PR  | PR    | I              | I     | I     |
| The publication of a list of activities which result in atmospheric emissions and which have or may have a significant detrimental effect on the environment, including health, social conditions, economic conditions, ecological conditions or cultural heritage   | S.21(1)(a) | PR  | PR    | I              | I     | I     |
| The declaration of any appliance or activity, or any appliance or activity falling within a specified category, as a controlled emitter if such appliance or activity, or appliances or activities falling within such category, result in atmospheric emissions which through ambient concentrations, bioaccumulation, deposition or in any other way, present a threat to health or the environment. | S.23(1)    | PR  | PR    | I              | I     | I     |

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| Typical AQA governance functions relating to problem identification and prioritisation  |          |   |       |                |       |                     |
|---|----------|---|-------|----------------|-------|---------------------|
| Function  | AQA Ref. | DEA   | Prov. | Municipalities |       |                     |
|   |          |   |       | Metro          | Dist. | Local               |
| The declaration of a substance or mixture of substances which, when used as a fuel in a combustion process, result in atmospheric emissions which through ambient concentrations, bioaccumulation, deposition or in any other way, present a threat to health or the environment, as a controlled fuel. | S.26(1)  | PR  | PR    | I              | I     | I                   |
| The declaration of any substance contributing to air pollution as a priority air pollutant and requiring persons falling within a specified category to submit and implement a pollution prevention plan in respect of the priority air pollutant.  | S.29(1)  | PR  | PR    | I              | I     | I                   |
| Key:  | PR       | Principle Responsibility in relevant jurisdiction | I     | Input          | O     | Oversight & support |

## 4.2.3 Strategy development

Once problems have been identified and prioritised, strategies must be devised to address the problems. These strategies are further detailed into plans of action that guide the interventions aimed at addressing the problems.

AQA requires a comprehensive planning regime as the examples in Table 5 illustrates.

Table 5: Typical AQA governance functions relating to strategy development

| Typical AQA governance functions relating to strategy development   |           |   |       |                |       |                     |
|---|-----------|---|-------|----------------|-------|---------------------|
| Function  | AQA Ref.  | DEA   | Prov. | Municipalities |       |                     |
|   |           |   |       | Metro          | Dist. | Local               |
| The establishment and maintenance of national norms and standards for air quality management planning   | S.7(1)(e) | PR  | I     | I              | I     | I                   |
| The development of air quality management plans as a component of environmental implementation plans or environmental management plans submitted in terms of Chapter 3 of the NEMA. | S.15(1)   | PR  | PR    | I              | I     | I                   |
| The development of air quality management plans as a component of integrated development plans as required by the Municipal Systems Act   | S.15(2)   | O   | O     | PR             | PR    | PR                  |
| The development of Priority Area Air Quality Management Plans   | S.19      | PR  | PR    | I              | I     | I                   |
| Assessment and approval of pollution prevention plans in respect of a priority air pollutant  | S.29(1)   | PR  | PR    | I              | I     | I                   |
| Key:  | PR        | Principle Responsibility in relevant jurisdiction | I     | Input          | O     | Oversight & support |

## 4.2.4 Standard setting

Environmental improvements may also come about if certain minimum standards are set as targets and these standards are properly monitored and enforced. AQA is largely based on the use of this strategy as Table 6 illustrates.

Table 6: Typical AQA governance functions relating to standard setting

| Typical AQA governance functions relating to standard setting   |          |     |       |                |       |       |
|---|----------|-----|-------|----------------|-------|-------|
| Function  | AQA Ref. | DEA | Prov. | Municipalities |       |       |
|   |          |     |       | Metro          | Dist. | Local |
| The setting of national norms and standards for: the control of emissions from point and non-point sources; air quality monitoring; air quality management planning; and air quality information management | 7(1)     | PR  | I     | I              | I     | I     |
| The setting of national standards for municipalities to monitor: ambient air quality; and point, non-point and mobile source emissions.   | 8(a)     | PR  | I     | I              | I     | I     |

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| Typical AQA governance functions relating to standard setting  |          |     |       |                |       |       |
|--|----------|-----|-------|----------------|-------|-------|
| Function   | AQA Ref. | DEA | Prov. | Municipalities |       |       |
|  |          |     |       | Metro          | Dist. | Local |
| The setting of national standards for monitoring: ambient air quality; and the performance of municipalities in implementing this Act.   | 8(b)     | PR  |       |                |       |       |
| The setting of national standards for the collection and management of data necessary to assess: compliance with the AQA; compliance with ambient air quality and emission standards; the performance of organs of state in respect of air quality management plans and priority area air quality management plans; the impact of, and compliance with, air quality management plans and priority area air quality management plans; compliance with the Republic's obligations in terms of international agreements; and access to information by the public. | 8(c)     | PR  |       |                |       |       |
| The setting of national ambient air quality standards for identified substances or mixtures of substances in ambient air which, through ambient concentrations, bioaccumulation, deposition or in any other way, present a threat to health, well-being or the environment   | 9(1)(b)  | PR  |       |                |       |       |
| The setting of national standards for emissions from point, non-point or mobile sources with respect to identified substances or mixtures of substances in ambient air which, through ambient concentrations, bioaccumulation, deposition or in any other way, present a threat to health, well-being or the environment   | 9(1)(c)  | PR  |       |                |       |       |
| The setting of provincial ambient air quality standards for identified substances or mixtures of substances in ambient air which, through ambient concentrations, bioaccumulation, deposition or in any other way, present a threat to health, well-being or the environment   | 10(1)(b) | O   | PR    |                |       |       |
| The setting of provincial standards for emissions from point, non-point or mobile sources with respect to identified substances or mixtures of substances in ambient air which, through ambient concentrations, bioaccumulation, deposition or in any other way, present a threat to health, well-being or the environment   | 10(1)(c) | O   | PR    |                |       |       |
| The setting of municipal standards for emissions from point, non-point or mobile sources in the municipality in respect of identified substances or mixtures of substances in ambient air which, through ambient concentrations, bioaccumulation, deposition or in any other way, present a threat to health, well-being or the environment in the municipality  | 11(1)    | O   | O     | PR             | PR    | PR    |
| The setting of national/provincial minimum emission standards in respect of a substance or mixture of substances resulting from a listed activity  | 21(3)(a) | PR  | PR    |                |       |       |
| The setting of national/provincial emission standards of any specified substance or mixture of substances that may be emitted from a controlled emitter  | 24(1)    | PR  | PR    |                |       |       |
| The setting of national/provincial standards relating to controlled fuels, including: standards for the use of the controlled fuel in combustion processes; standards for the manufacture or sale of the controlled fuel; specifications, including maximum or minimum levels or concentrations of the constituents of substances or mixtures of substances, for the composition of controlled fuels; and the prohibition of the manufacture, sale or use of the controlled fuel   | 27       | PR  | PR    |                |       |       |
| The setting of national standards for the control of noise, either in general or by specified machinery or activities or in specified places or areas; or for determining a definition of noise; and the maximum levels of noise.  | 34(1)    | PR  |       |                |       |       |
| Make regulations that incorporate by reference any code of practice or any national or international standard relating to air quality.   | 55(1)(d) | PR  | PR    |                |       |       |

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| Typical AQA governance functions relating to standard setting |    |   |     |       |                |                     |       |
|---|----|---|-----|-------|----------------|---------------------|-------|
| Function  |    | AQA Ref.  | DEA | Prov. | Municipalities |                     |       |
|   |    |   |     |       | Metro          | Dist.               | Local |
| Key:  | PR | Principle Responsibility in relevant jurisdiction | I   | Input | O              | Oversight & support |       |

## 4.2.5 Policy and regulation development

Although the AQA provides the legislative framework for air quality management and despite the fact that the making of by-laws in respect of air quality management is an exclusive municipal competence, the AQA also directs or implies a number of functions in this regard as illustrated in the Table 7.

Table 7: Typical AQA governance functions relating to policy and regulation development

| Typical AQA governance functions relating to policy and regulation development   |    |   |     |       |                |                     |       |
|--|----|---|-----|-------|----------------|---------------------|-------|
| Function   |    | AQA Ref.  | DEA | Prov. | Municipalities |                     |       |
|  |    |   |     |       | Metro          | Dist.               | Local |
| The development and promulgation of regulations necessary for implementing and enforcing approved priority area air quality management plans, including: funding arrangements; measures to facilitate compliance with such plans; penalties for any contravention of or any failure to comply with such plans; and regular review of such plans.   |    | S.7(1)(e)   | PR  | PR    | I              | I                   | I     |
| The development and promulgation of regulations in respect of measures to prevent, control or correct the release of a substance into the air from a source in the Republic that may have a significant detrimental impact on air quality, the environment or health in a country other than the Republic.   |    | S.50(2)   | PR  | I     | I              | I                   | I     |
| The development and promulgations of regulations in respect of: any matter necessary to give effect to the Republic's obligations in terms of an international agreement relating to air quality; and matters relating to environmental management cooperation agreements, to the extent that those agreements affect air quality;   |    | S.53  | PR  | I     | I              | I                   | I     |
| The development and promulgations of regulations in respect of: emissions, including the prohibition of specific emissions, from point, non-point and mobile sources of emissions, including motor vehicles; open fires and incinerators; ozone-depleting substances; codes of practice: records and returns; labelling; trading schemes; powers and duties of air quality officers; appeals against decisions of officials in the performance of their functions in terms of the regulations; incentives to encourage change in behaviour towards air pollution by all sectors in society; requirements in respect of monitoring; the avoidance or reduction of harmful effects on air quality from activities not otherwise regulated in terms of this Act; any matter that may or must be prescribed in terms of this Act; or any other matter necessary for the implementation or application of this Act. |    | S.53  | PR  | PR    | I              | I                   | I     |
| Key:   | PR | Principle Responsibility in relevant jurisdiction | I   | Input | O              | Oversight & support |       |

## 4.2.6 Environmental impact management

Through impact assessment the safety, health and environmental impacts of developments and activities are scrutinised. This process encourages participation by all stakeholders and provides decision-makers with detailed information to determine whether an activity may proceed or not, and in the case of an approval provides information on the mitigation measures that must be introduced to ensure that safety, health and environmental impacts are kept to acceptable levels.

Reference to impact management is made in a number of sections of the AQA, including:



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- An AQO may require any person to submit an Atmospheric Impact Report if it is reasonably believed that the person has contravened or failed to comply with the AQO or any conditions of a licence and the contravention has had, or may have, a detrimental effect on the environment (Section 30(a));
- An AQO may require any person to submit an Atmospheric Impact Report if a review of a licence is undertaken (Section 30(b));
- The application for an AEL, when the effect or likely effect of the pollution emitted or likely to be emitted by a Listed Activity on the environment must be considered (Section 39(b)); and,
- Significant trans-boundary impacts require management through preventative, control or corrective measures (Section 50(2)).

Furthermore, environmental impact management has been rolled out nationally and provincially in the form of the environmental impact assessment (EIA) process. This participatory process provides government with the detailed information required for it to make an informed decision on whether a development may go ahead or not and, in the case of a go-ahead, exactly what measures must be taken to ensure that safety, health and environmental impacts are kept to acceptable levels.

The use and importance of the EIA tool is fully acknowledged by the AQO and, as such, the use of EIAs is inextricably linked to the AQO's atmospheric emission licensing process as discussed in Paragraph 5.5.2.

#### 4.2.7 Authorisations

An authorisation (permission, permit, licence, etc.) is a key component of traditional "command and control" regulatory practise. The principle authorisation in the AQO is the AEL, which is described in detail in Section 36 to Section 49 and summarised in Table 8: Typical AQO governance functions relating to authorisations. Table 8. Implementation of the AQO atmospheric emission licensing system by licensing authorities is set out in Chapter 5 and other provisions of the AQO.

Table 8: Typical AQO governance functions relating to authorisations.

| Typical AQO governance functions relating to authorisations  |            |     |       |                |       |       |
|--|------------|-----|-------|----------------|-------|-------|
| Function   | AQO Ref.   | DEA | Prov. | Municipalities |       |       |
|  |            |     |       | Metro          | Dist. | Local |
| Issuance of an Atmospheric Emission Licence if a provincial organ of the state, which has been delegated the power to perform the licensing authority by the metropolitan or district municipality   | S.36(5)(a) | PR  |       |                |       |       |
| Issuance of an atmospheric emission licence; if the listed activity falls within the boundaries of more than one province;   | S.36(5)(b) | PR  |       |                |       |       |
| Issuance of an Atmospheric Emission Licence, if the listed activity forms part of a matter declared as a national priority in terms of a Cabinet decision and notice referred to in section 24C(2B) of the National Environmental Management Act, 1998, as amended by the National Management Laws Second Amendment Act, 2013              | S.36(5)(c) | PR  |       |                |       |       |
| Issuance of an Atmospheric Emission Licence, if the listed activity relates to the activities listed in terms of section 24(2) of the National Environmental Management Act, 1998, or in terms of section 19(1) of the National Environmental Management: Waste Act, 2008, and the Minister has been identified as the competent authority | S.36(5)(d) | PR  |       |                |       |       |

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| Typical AQA governance functions relating to authorisations  |                |     |       |                |       |       |
|--|----------------|-----|-------|----------------|-------|-------|
| Function   | AQA Ref.       | DEA | Prov. | Municipalities |       |       |
|  |                |     |       | Metro          | Dist. | Local |
| Issuance of an Atmospheric Emission Licence, if the listed activity relates to a prospecting, mining exploration or production activity as contemplated the mineral and Petroleum Resources Development Act, 2002 (Act No.28 of 2002), in the area for which the right has been applied for, and the Minister as the competent authority in terms of section 24C of [Subsection (5) added by section 5 (c) of Act 20, 2014]. | S.36(5)(e)     | PR  | I     | I              | I     | I     |
| Transferring of Provisional Atmospheric Emission Licence and Atmospheric Emission Licence if ownership of an activity for which a provisional atmospheric emission licence was issued is transferred.  | S.44(1)        | PR  | PR    | PR             | PR    | I     |
| Review of Provisional Atmospheric Emission Licence and Atmospheric Emission Licence at intervals specified in the licence, or when circumstances demand that a review is necessary.  | S.45(1)        | PR  | PR    | PR             | PR    | I     |
| Variation of Provisional Atmospheric Emission Licence and Atmospheric Emission Licence.  | S.46(1)(a)-(d) | PR  | PR    | PR             | PR    | I     |
| Renewal of Provisional Atmospheric Emission Licence and Atmospheric Emission Licence on application by the holder of the licence.  | S.47(1)        | PR  | PR    | PR             | PR    | I     |
| Key: PR Principle Responsibility in relevant jurisdiction I Input O Oversight & support  |                |     |       |                |       |       |

Notwithstanding the provisions of section 36(5) (a)-(e), the review, variation, transfer and renew of a Provisional Atmospheric Emission Licence (PAEL) and Atmospheric Emission Licence (AEL) shall remain the function of the licensing authority that issued the initial AEL. This is done to account for (i) the intent of section 36(5) (a)-(e) which is to address service delivery aspects of new AELs, (ii) the constitutional mandate of municipalities, (iii) concurrence in performing AQM functions, and (iv) ensuring continuity in AEL management.

#### 4.2.8 Compliance monitoring

Compliance with norms and standards is an important element of the environmental governance cycle (see Figure 1) and follows authorisation. Table 9 provides examples of these functions.

Table 9: Typical AQA governance functions relating to compliance monitoring

| Typical AQA governance functions relating to compliance monitoring   |            |     |       |                |       |       |
|--|------------|-----|-------|----------------|-------|-------|
| Function   | AQA Ref.   | DEA | Prov. | Municipalities |       |       |
|  |            |     |       | Metro          | Dist. | Local |
| Monitoring potential illegal listed activities   | S.51(1)(a) | PR  | PR    | PR             | PR    | I     |
| Monitoring compliance with emission standards in respect of the manufacture, sale or use any appliance or conducting of an activity declared as a controlled emitter | S.51(1)(a) | PR  | PR    | PR             | PR    | I     |
| Monitoring compliance in respect to reasonable steps to prevent the emission of any offensive odour caused by any activity.  | S.51(1)(a) | O   | O     | PR             | PR    | PR    |
| Monitoring compliance with directives to submit or to implement a pollution prevention plan  | S.51(1)(b) | PR  | PR    | I              | I     | I     |
| Monitoring compliance with directives to submit an atmospheric impact report   | S.51(1)(c) | PR  | PR    | PR             | PR    | PR    |

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| Typical AQA governance functions relating to compliance monitoring  |            |   |       |                |       |                     |
|---|------------|---|-------|----------------|-------|---------------------|
| Function  | AOA Ref.   | DEA   | Prov. | Municipalities |       |                     |
|   |            |   |       | Metro          | Dist. | Local               |
| Monitoring compliance with notification requirements in respect of mines that are likely to cease mining operations within a period of five years   | S.51(1)(d) | PR  | I     | I              | I     | I                   |
| Monitoring compliance with conditions or requirements of an atmospheric emission licence  | S.51(1)(e) | PR  | PR    | PR             | PR    | I                   |
| Monitoring any application for an atmospheric emission licence, or for the transfer, variation or renewal of such a licence to ensure that it does not contain false or misleading information                  | S.51(1)(f) | PR  | PR    | PR             | PR    | I                   |
| Monitoring any information provided to an air quality officer to ensure that it does not contain false or misleading information  | S.51(1)(g) | PR  | PR    | PR             | PR    | I                   |
| Monitoring compliance with conditions subject to which exemption from a provision of the AQA was granted  | S.51(1)(h) | PR  | I     | I              | I     | I                   |
| Monitor compliance with the requirements of the National Dust Control Regulations   | S32 (regs) | I   | I     | PR             | PR    | PR                  |
| Monitor compliance with the emission standards set out for activities declared as controlled emitters in terms of section 23  | S23 (regs) | O   | O     | O              | PR    | PR                  |
| Monitor compliance with the emission standards set out for activities declared as controlled emitters in terms of section 23; for facilities that have been issued with an AEL                                  |            | PR  | PR    | PR             | PR    | I                   |
| Monitor compliance with the requirements for emission reporting according to the regulations developed in terms of section 12(b) and (c) in the event such reporting requirements are not stipulated in the AEL | S12        | PR  | I     | I              | I     | I                   |
| Key:  | PR         | Principle Responsibility in relevant jurisdiction | I     | Input          | O     | Oversight & support |

## 4.2.9 Enforcement

The AQA is regarded as a "specific environmental management Act" under the NEMA (see Section 1 of NEMA) and, as such, may be enforced by the Environmental Management Inspectors – the so-called "Green Scorpions".

With reference to the Green Scorpions, and as an example of compliance and enforcement provisions contained in the AQA, an Environmental Management Inspector may require the holder of the licence, on request, to submit to the inspector a certified statement indicating – (i) their compliance monitoring records; (ii) particulars of instances of non-compliance; (iii) the reasons for instances of non-compliance; and (iv) any action taken, or to be taken, to prevent a recurrence of the instance of non-compliance.

This notwithstanding, enforcement and/or compliance promotion actions in response to significant non-compliance must be taken in respect of the various examples of compliance monitoring described in the previous paragraph.

Furthermore, enforcement is also addressed in the following sections of AQA:

- The Minister or MEC may prescribe penalties for any contravention of or any failure to comply with Priority Area AQMPs (Section 20(c));
- An AEL must specify the penalties for non-compliance (Section 43(1)(k)), and can include other measures necessary for enforcement (Section 43(1)(m)); and,
- Sections on offences (Section 51) and penalties (Section 52 and Section 55(2)).

## 4.3 The implementation of the functions by the three spheres of government

Although the above sections provide a clear indication of the various air quality management functions to be implemented by the affected spheres of government, as the national, provincial and local spheres of government are autonomous, "how" these functions are to be implemented is up to each department and/or municipality. As such, it is important that all provinces and municipalities that experience air quality issues within their jurisdictions build the necessary organisational capacity to implement these functions in an efficient and effective manner and in a manner that is commensurate with the

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air quality problems to be addressed. In this regard, organisational capacity refers to the structures (including sustainable funding), systems, skills, strategies, incentives and interrelationships necessary to implement these functions in an efficient and effective manner and in a manner that is commensurate with the air quality problems to be addressed.

Notwithstanding the above, although the national department cannot dictate how other autonomous spheres of government should capacitate themselves to implement their air quality management functions, it will continue to provide assistance and guidance to all spheres of government through various means, including, but not limited to: the hosting of air quality governance events (see, for example, Paragraph 4.4.6); the development of various implementation manuals, regulations, guidelines, software, standard formats, templates and best practise case studies aimed at the efficient and effective implementation of the AQA (see, for example, Paragraphs 5.4.6.2 and 5.4.2); and the hosting of short-courses in the use of these implementation manuals, guidelines, software, standard formats and templates (see Paragraph 5.9.2.4). Through this assistance and guidance, the national department also wishes to ensure that the AQA and its National Framework are implemented in a coherent, cohesive, integrated and uniform fashion.

The creation and maintenance of dedicated air quality management capacity in municipalities is necessary to ensure effective air quality management: especially for municipalities in Error! Reference source not found.. As such, provincial departments are encouraged to liaise with such municipalities with a view to cooperative agreements in respect of air quality management functions. This is especially relevant in respect to the atmospheric emission licensing function when considering Section 36(2) of the AQA which reads – "If a metropolitan or district municipality has delegated its functions of licensing authority to a provincial organ of state in terms of section 238 of the Constitution, that provincial organ of state must for the purposes of this Act be regarded as the licensing authority in the area of that municipality".

In line with the above, district municipalities are also encouraged to liaise with local municipalities with a view to cooperative agreements in respect of air quality management functions.

Notwithstanding the above, how each sphere of government plans to implement its air quality management functions must be spelt out in the required provincial and municipal air quality management plans (see Paragraphs 5.4.6.6 and 5.4.6.7 respectively).

#### 4.4 The need for vertical and horizontal integration

Government in South Africa is constituted as national, provincial and local spheres of government. The Intergovernmental Relations Framework Act (Act No. 13 of 2005) establishes a framework for the three spheres of government to promote and facilitate intergovernmental relations and to provide for mechanisms and procedures to facilitate the settlement of intergovernmental disputes. All spheres of government must work together and integrate as far as possible their actions in the provision of services. The object of this Act is to provide within the principles of cooperative government set out in Chapter 3 of the Constitution, a framework for national, provincial and local spheres of government and all organs of state to facilitate coordination in the implementation of policy and legislation.

In terms of the Constitution of the Republic of South Africa, 1996, national and provincial spheres of government have concurrent executive and legislative powers in pollution control matters, while the local sphere of government has exclusive executive and legislative powers in air pollution matters. Effective execution of duties requires integration between the spheres of government as provided for by the Intergovernmental Relations Framework Act (Act No. 13 of 2005).

Coupled with vertical integration between spheres of government, is the need for horizontal integration in order to improve air quality management. Intergovernmental coordination and cooperation are fundamental to good air quality governance. To achieve the above, government has created a number of structures to ensure both horizontal and vertical integration as illustrated in Figure 2.

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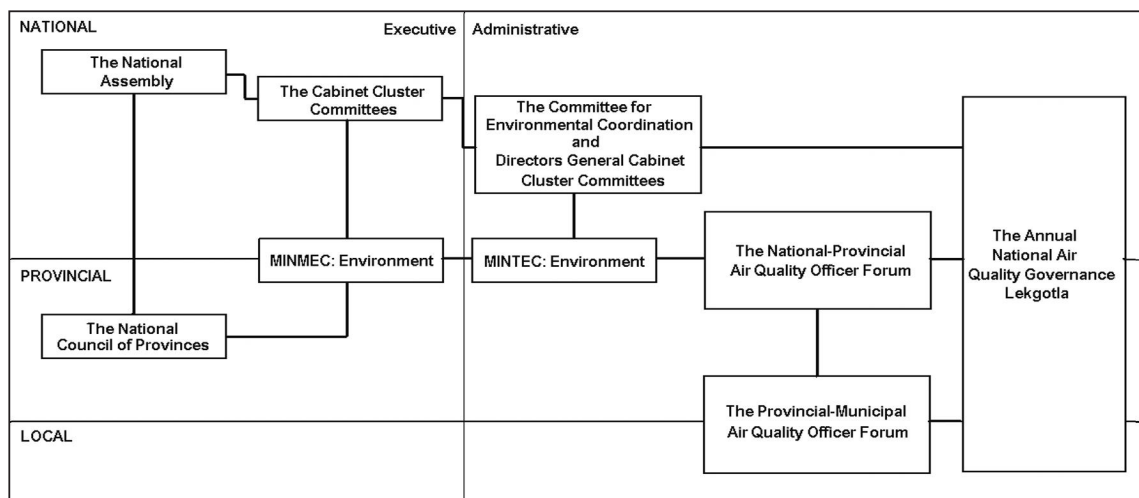


Figure 2: Intergovernmental horizontal and vertical coordination and cooperation structures associated with air quality governance.

Although Figure 2 provides the full set of linkages to the National Assembly and the National Council of Provinces, structures specifically involved in intergovernmental coordination and cooperation in respect of air quality governance as described below.

#### 4.4.1 MINMEC: Environment

The MINMEC: Environment is a standing intergovernmental body consisting of the Minister for Environmental Affairs and members of the provincial Executive Councils (MECs) responsible for environmental management functions. MINMEC meets quarterly.

#### 4.4.2 MINTEC: Environment

The MINTEC: Environment is a standing intergovernmental body that provides technical input into the MINMEC. The MINTEC consists of the Director General of the Department of Environmental Affairs and Tourism and the heads of the provincial departments responsible for environmental management functions. MINTEC also meets quarterly.

#### 4.4.3 The Committee for Environmental Coordination (CEC)

The Committee for Environmental Coordination was established in terms of Section 7 of the NEMA. The object of the Committee is to promote the integration and coordination of environmental functions by the relevant organs of state, and in particular to promote the achievement of the purpose and objectives of environmental implementation plans and environmental management plans.

The functions of the Committee include the following:

- Scrutinising, reporting and making recommendations on the environmental implementation plans;
- Investigating and making recommendations regarding the assignment and delegation of functions between organs of state under this Act or any other law affecting the environment and regarding the practical working arrangements, including memoranda of understanding, between the organs of state represented by members and other organs of state;
- Investigating and recommending the establishment of mechanisms in each province, with the concurrence of the MEC, for providing a single point in the province for the receipt of applications for authorisations, licences and similar permissions required for activities under legal provisions concerned with the protection of the environment where such authorisations, licences or permissions are required from more than one organ of state, and procedures for the coordinated consideration of such applications by the organs of state concerned;
- Making recommendations to coordinate the application of integrated environmental management, including

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cooperation in environmental assessment procedures and requirements and making determinations regarding the prevention of duplication of efforts;

- Making recommendations aimed at securing compliance with the NEMA principles and national norms and standards contemplated in Section 146(2)(b)(i) of the Constitution;
- Making recommendations regarding the harmonisation of the environmental functions of all relevant national departments and spheres of government;
- Advising the Minister on providing guidelines for the preparation of environmental management plans and environmental implementation plans; and
- Endeavouring to ensure compliance with the NEMA principles by making appropriate recommendations, requiring reports from its members and advising government on law reform.

The CEC comprises: the Director-General: Environmental Affairs, who acts as chairperson; the Director-General: Water Affairs; the Director-General: Energy; the Director-General: Minerals Resources, the Director-General: Rural Development and Land Reform DRDLR; the Director-General: Human Settlement; the Director-General: Agriculture, Forestry and Fisheries; the Director-General: Health; the Director-General: Labour; the Director-General: Science and Technology; the Director-General: Transport, the heads of provincial environmental departments; and a representative from the South African Local Government Association (SALGA).

#### 4.4.4 The National–Provincial Air Quality Officers' Forum

The National–Provincial Air Quality Officers' Forum is a subset of the existing MINTEC Working Group Two (WGII). WGII meetings address air quality management issues in all spheres of government. Quarterly WGII deliberations on air quality management issues are regarded as the deliberations of the National–Provincial Air Quality Officers' Forum.

#### 4.4.5 The Provincial–Municipal Air Quality Officers' Forum

Every province needs to establish a Provincial–Municipal Air Quality Officers' Forum and convene quarterly forum meetings. In order to facilitate the efficient, effective and cohesive functioning of these forums, the national department provided all provincial AQOs with generic terms of reference for such forums.

The overall objective of the Forum is framed as a desired outcome as follows: *"An effective governance framework is developed, maintained and implemented in a manner that ensures that the unacceptable current and future impacts of atmospheric emissions are minimised, mitigated or managed in line with government policy, legislation, goals, strategies, norms and standards that are protective of everyone's right to an environment that is not harmful to their health or well-being and protect the environment for the benefit of present and future generations through reasonable legislative and other measures that prevent pollution and ecological degradation, promote conservation and secure ecologically sustainable development and the use of natural resources while promoting justifiable economic and social development."*

#### 4.4.6 The Annual Air Quality Management Governance Lekgotla

The Air Quality Governance Lekgotla is the premier event for AQOs to engage and uphold the spirit of Chapter 3 of the Constitution, which recognises that national, provincial and local spheres of government are distinctive, interdependent and interrelated. The event provides AQOs from all spheres of government with a unique opportunity to discuss and debate ways and means of addressing the various governance challenges, interact with their peers, share experiences and lessons learned and discuss planning for the year ahead. The Lekgotla also provides the national department with an effective platform for informing all spheres of government about the national AQA rollout plans and progress reports.

### 4.5 3D governance model

The emphasis on both vertical and horizontal integration for effective environmental governance may be expressed in a multi-dimensional 3D governance model depicted in Figure 3. The central vertical core represents the coordinating department of each of the spheres of government, ranging from the national sphere, and the provincial spheres to municipalities. Vertical integration between the spheres of government is expressed by the vertical arrows. Responsibilities for elements within the environmental governance cycle rest with various government spheres, hence integration between them is critical.

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The need for horizontal integration is expressed by the interrelationships which radiate from each of the coordinating departments, terminating in circles that represent subsidiary but important departments and stakeholders in the implementation of air quality governance.

4.6 Cross-cutting issues

Underpinning the 3D governance model described above are three cross-cutting issues essential for its successful integration. These are public participation, capacity development and information dissemination. Described as one of the fundamental principles of sustainable development, public participation ensures the public's right to know and the right to participate in decision-making and is considered further in 5.9.1. Capacity development is of particular importance in the South African context and is judged as critical for the successful implementation of the AQA (See 5.9.2). The third cross-cutting issue, namely information dissemination, relates to all aspects of air quality management and is addressed in Paragraph 5.9.3.

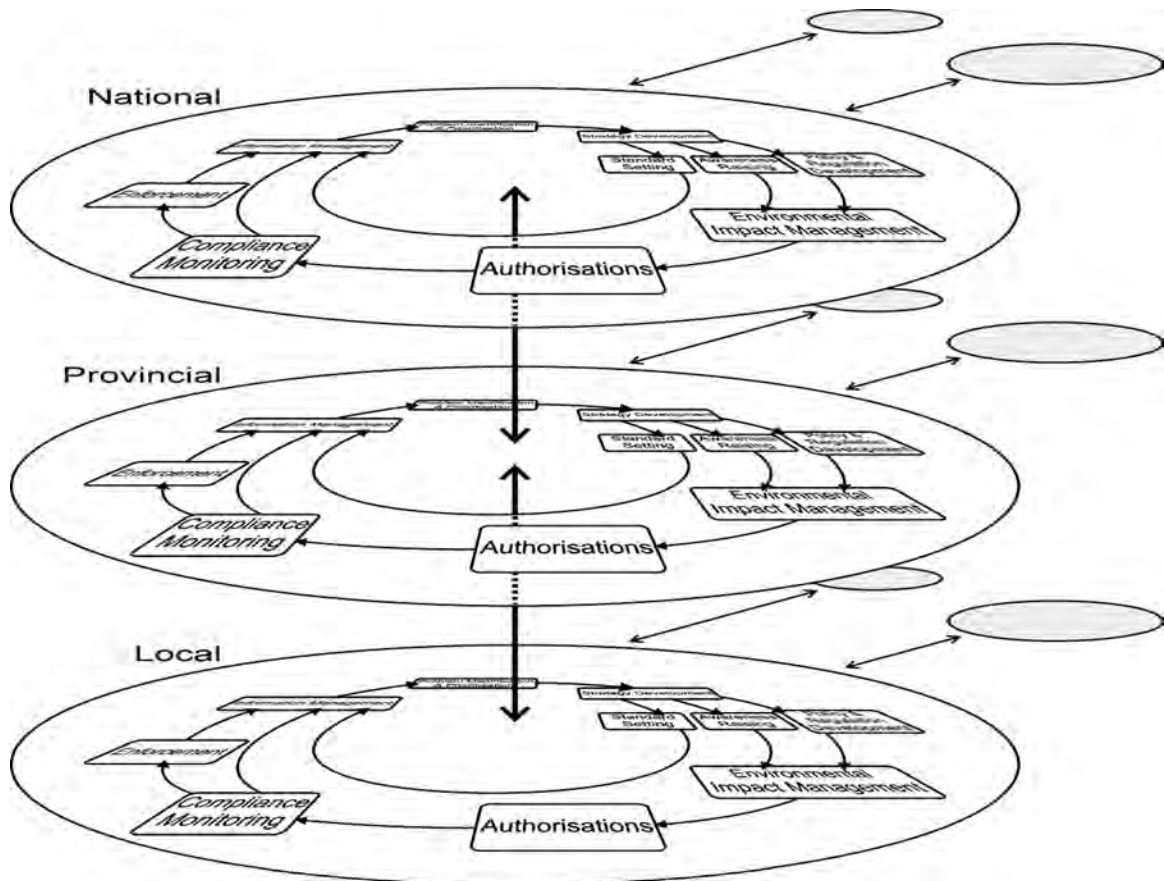


Figure 3: The 3D governance model

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## 5. TOOLS FOR THE IMPLEMENTATION OF THE NATIONAL FRAMEWORK

### 5.1 Introduction

The implementation of the National Framework is dependent on a combination of both process/governance and technical mechanisms/measures. The process issues are overarching and integrated throughout the National Framework and include among others cooperative governance and enforcement. The technical mechanisms and measures are more specific and include norms and standards for matters relating to air quality management and meeting the requirements of the AQA.

### 5.2 Air quality information management

Informed decision-making is fundamental to good governance and decisions can only be informed if decision-shapers and decision-makers have ready access to accurate, relevant, current and complete information. Constructive participation in, and implementation of, air quality management matters are also dependent on the same information. Section 32 of the Constitution of the Republic of South Africa, 1996, states that all South Africans have the right of access to any information held by the state, and any information that is held by another person and that is required for the exercise or protection of any rights. Section 32 further states that national legislation must be enacted to give effect to this right. In this regard, the Promotion of Access of Information Act, 2000 was enacted to give effect to the constitutional right of access to information. For example, Section 31(1)(a) of the NEMA provides that "every person is entitled to have access to information held by the State and organs of state which relates to the implementation of the NEMA and any other law affecting the environment, and to the state of the environment and actual and future threats to the environment, including any emissions to water, air or soil and the production, handling, transportation, treatment, storage and disposal of hazardous waste and substances". Implicit in this right is that all South Africans shall have access to air quality information and that access shall be facilitated by the AQA and through the National Framework. In order to uphold this right and effectively address the air quality information requirements contained in the AQA, the national department, in partnership with the South African Weather Service (SAWS), have established the South African Air Quality Information System (the SAAQIS), and developed guidance manuals and publications to provide support to AQOs and air quality information to a wider audience. Air quality information management is discussed in this paragraph, considering the requirements of the SAAQIS (5.2.1), the DEA publication series (5.2.2) and air quality reporting (5.2.3).

The South African Weather Service (SAWS) is the custodian of the SAAQIS. In this regard, SAWS shall:

- Provide technical infrastructure and expertise for the management of the SAAQIS, operate and maintain the infrastructure of the SAAQIS and safeguard all databases to ensure ambient air quality information is available for present and future generations;
- Develop and upgrade the SAAQIS and NAAQMN infrastructure (technology, instruments, systems, research and development) in consultation with Department to ensure seamless and nation-wide integration with the national strategies on the implementation of the AQA;

#### 5.2.1 The South African Air Quality Information System (SAAQIS)

The SAAQIS (<http://saagis.environment.gov.za>) makes air information available to stakeholders, provide a common system for managing air quality in South Africa and provide uniformity in the way data, information and reporting are managed in South Africa. A central aim of the SAAQIS is that it allows the public access to air quality information. Improving the availability of information facilitates transparency in processes, informs decision making, and builds capacity. The SAAQIS streamlines the flow of relevant information; provides a tool to assist in managing air quality and builds awareness about air quality among stakeholders in general.

The SAAQIS aims to:

- Ensure that air quality information management and reporting requirements directed or implied by the AQA are met efficiently and effectively;
- Ensure that air quality management decisions, interventions, activities and actions are informed by accurate, current and complete information;
- Ensure that accurate, current, complete and relevant air quality information is available to all stakeholders and the public;
- And provide all South African's with information on the state of their air quality and the status of efforts to



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progressively ensure their right to air that is not harmful to health and well-being.

SAAQIS includes the following air quality information input modules, extraction modules and applications tools:

- Ambient air quality information;
- Norms and standards for air quality monitoring;
- Air quality related legislation and regulations;
- Norms and standards for air quality information management;
- Air Quality Management Plans;
- Air quality publications; and
- Technical and scientific air quality reports.

Each one of these modules has a number of different sub-modules that are designed for the different functions as required for the effective dissemination of information to the public.

#### 5.2.1.1 *Ambient air quality information*

The ambient air quality information component of SAAQIS is a dynamic online system with two main modules for managing ambient air quality stations, data and reporting of information to the public and a module for managing all assets procured by government for the purpose of effectively monitoring ambient air quality. All ambient monitoring data collected for the purpose of assessing compliance with the Air Quality Act by national, provincial, district/metropolitan and local municipalities shall be made available to SAAQIS for dissemination to the public. The SAAQIS provides tools for user to manage ambient monitoring data (importing, verifying, validating, analysing, exporting and reporting). The data management application provides users with ability to perform quality assurance and quality control (QA/QC), data storage and presentation/reporting routines online in order to meet monitoring and reporting requirements for ambient data. The asset management system allows for users to create and manage ambient monitoring assets inventory (instruments and spares), as well as managing/reporting stations operations such as calendar of visits, activities during visits (instrument calibration and maintenance, repairs, and any other station operations). The SAAQIS ambient monitoring component is designed to meet requirements of ISO 17025 and will be used by monitoring networks as part of the quality system for SANAS accreditation.

SAAQIS contains a comprehensive built-in ambient air quality station management applications. The applications include an online Asset Management module that provides assistance with the importing of raw data into the system and associated reporting requirements, validation, assessment and exporting of the data, as well as the reporting and viewing of processed data. Both applications are designed to be compliant with ISO: 17025 testing laboratory quality system requirements. The ambient air quality implementation targets for SAAQIS are summarised in Table 10.

Table 10: SAAQIS ambient air quality related implementation targets

| Key Milestone, Product or Output  | Timeframe                            |
|---|--------------------------------------|
| SAAQIS Upgrade  | 2017/18                              |
| Reporting of all government-owned air quality monitoring stations into SAAQIS | As per outcome 10 delivery agreement |
| National Ambient Air Quality Monitoring Strategy                              | 2018/9                               |
| Live reporting of air quality monitoring stations into SAAQIS                 | 2018/9                               |

#### 5.2.1.2 *Ambient air quality monitoring norms and standards in SAAQIS*

In order to ensure integrity, quality and representativity of the ambient monitoring data, ambient air quality monitoring for compliance purposes shall be conducted according to prescribed norms and standards. The SAAQIS will make national norms and standards for ambient air quality monitoring available. The norms and standards for air quality monitoring will include the following:

- Procedures on ambient monitoring programme design, pollutants to monitor, considerations on siting of stations and monitoring station classifications.
- Procedures on the use of verified monitoring equipment, reference and equivalence monitoring methods in accordance with appropriate norms.

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- Procedures on how ambient air quality data will be recorded, analysed, processed, reported and archived following best-practice principles.
- Guidance on monitoring station operation, maintenance and calibration following best-practice principles.
- Quality control and quality assurance procedures fit for ambient air quality monitoring and reporting.
- Guidance concerning air quality measurements by passive sampling.
- Systems for transferring data in SAAQIS.
- National Air Quality Index for simplified reporting of daily air quality to the general public.

AQ monitoring Norms and Standards will also include guidance on the use of alternative air quality monitoring methods such as passive sampling and low-cost sensors (commercial micro-sensors). These alternative methods generally:

- Provide cheaper options to ambient monitoring compared to the reference methods of continuous ambient monitoring in areas where screening assessments are required.
- Can be used cautiously to improve the spatial and temporal coverage in continuous ambient monitoring.

#### 5.2.1.3 Information on AQ legislation, policies, and regulations

SAAQIS provides current legislation, regulations and by-laws through a user-friendly interface. The interface helps the user find relevant parts of the legislation and regulations. The SAAQIS provides search facilities in the documents, general advice to stakeholders and guidance as to roles and responsibilities of different actors and agencies within the various regulations that are available.

Table 11: SAAQIS policy and legislation related implementation targets

| Key Milestone, Product or Output   | Timeframe |
|------------------------------------|-----------|
| All current policy and legislation | Ongoing   |

#### 5.2.1.4 South African air quality research reference database

A large body of scientific literature that has been generated by the South Africa air quality scientific community over the years has been drawn together into the *South African Air Quality Research Reference Database*. This includes information on publications in the formal peer reviewed literature, presentations at international and national scientific conferences, 'grey literature' i.e. institutional research reports and post graduate theses. The database is searchable by fields that include details of the publication, and where this information is housed and available. The database has a facility for authors to record new material as it is published. This database is made publicly available via a link from the SAAQIS.

#### 5.2.1.5 Information regarding Air Quality Management Plans

Methodological approaches and guidance on the standards expected for development of the Air Quality Management Plans (AQMP manual) are available via the SAAQIS. AQMPs that have been developed at national, provincial and municipal spheres, and for Priority Areas are also made available.

#### 5.2.1.6 Information on policy, legislation and regulations

SAAQIS provides current legislation, regulations and by-laws through a user-friendly interface. The interface helps the user find relevant parts of the legislation and regulations. The SAAQIS provides search facilities in the documents, general advice to stakeholders and guidance as to roles and responsibilities of different actors and agencies within the various regulations that are available.

#### 5.2.1.7 Additional aspects of the SAAQIS

The SAAQIS is intended to provide a complete solution to the management of air quality information in South Africa, therefore the components discussed are expanded on and enhanced through mechanisms for education and skills development and accessing support on air quality issues and management. Provisions may also be included in the SAAQIS for:

- Interactive learners centre with information on air quality for school children and members of the public to stimulate interest in environmental matters.
- A support centre or helpdesk for assistance on air quality information related queries;
- A national website for updates on air quality status;
- A media library containing air quality information from media sources;
- A database of key stakeholders;

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- A library of relevant links to relevant national and international air quality information.
- Complaints register for the public to send air quality concerns directly to the relevant air quality official

## 5.2.2 Air quality publications

A series of information booklets are being developed by the national department with the objective of advancing the science and understanding of air quality management and to address the responsibility regarding the provision of air quality information to the public. The information series is also aimed at providing air quality management practitioners with technical guidance. The completed publications are available from the national department and will be available for downloading on SAAQIS.

## 5.2.3 Air quality reporting

The main objective of reporting on air quality is to convey information to a target user group, with variation in the purpose and content of air quality reports according to user groups. The following sections outline different types of air quality reports that may be required. Reporting on international commitments is governed by the stipulations in the Climate Change White Paper.

5.2.3.1 *State of air reporting*

State of environment report is necessary to describe baseline environmental conditions against which changes or trends may be measured. These reports are important in prioritising and setting goals for environmental management and will include a chapter on the state of the air. This chapter will be reviewed every 5 years and include the following:

- A set of defined indicators to measure ambient air quality;
- Information on:
  - Air quality standards and objectives;
  - Ambient air quality monitoring activities;
  - Listed Activities and their related emissions;
  - Status of ambient air quality and trends;
- Air quality management initiatives.

5.2.3.2 *The Air Quality Officers' annual reports*

In order to meet the progress reporting requirements in respect of air quality management plans, all municipal AQOs will be required to submit a Municipal Air Quality Officer's Annual Report to the provincial AQA at least 1 month prior to the Annual National Air Quality Governance Lekgotla (see Paragraph 4.4.6, page 36). The provincial AQOs will then use these reports to inform the compilation of a Provincial Air Quality Officer's Annual Report to be submitted to the National AQA at least 2 weeks prior to the Lekgotla. The National AQA will then compile the draft National Air Quality Officer's Annual Report for presentation to the Lekgotla for ratification and submission for publication. Details on the structure and content of the National Air Quality Officer's Annual Report can be found in Paragraph 5.2.3.2 of this document.

5.2.3.3 *South African Air Quality Index*

South Africans have a right to access ambient air quality monitoring information monitored at all the stations commissioned by government. However, ambient pollutant measurements can be complex for the general public to understand how the measured concentrations translate to the quality of air and associated health effects. The Department of Environmental Affairs has developed a South Africa Air Quality Index (AQI) in line with best international practices in order to simplify the reporting of air quality to the general public.

The AQI is a simplified tool for reporting LIVE air quality to the general public. The index tells

- How clean or polluted air is on a scale of 0 (clean air) to 10 (much polluted air), Table 12.
- What associated health effects might be of concern to the general population, with focus on sensitive groups such as children, the elderly and people with medical dispositions that can be exacerbated by poor air quality, Table 13.

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Table 12: South African AQI bands for NO<sub>2</sub>, SO<sub>2</sub>, O<sub>3</sub>, PM<sub>10</sub>, PM<sub>2.5</sub> and CO.

| Air Quality Status | Summary Message | Bands | NO <sub>2</sub> Bands (ppb) | NO <sub>2</sub> | SO <sub>2</sub> Bands (ppb) | SO <sub>2</sub> | Ozone Bands (ppb) | Ozone | PM10 Bands (ug/m <sup>3</sup> ) | PM10 | PM2.5 Bands (ug/m <sup>3</sup> ) | PM2.5 | CO    | CO Bands (ppb) |
|--------------------|-----------------|-------|-----------------------------|-----------------|-----------------------------|-----------------|-------------------|-------|---------------------------------|------|----------------------------------|-------|-------|----------------|
| Low                | Good            | 1     | 0-66                        | 0               | 0-115                       | 0               | 0-26              | 0     | 0-25                            | 0    | 0-12                             | 0     | 0     | 0-10000        |
|                    |                 | 2     | 67-133                      | 67              | 116-231                     | 116             | 27-53             | 27    | 26-50                           | 26   | 13-26                            | 13    | 10000 | 10001-20000    |
|                    |                 | 3     | 133-200                     | 133             | 232-350                     | 232             | 54-80             | 54    | 51-75                           | 51   | 27-40                            | 27    | 20000 | 20001-30000    |
| Moderate           | Moderate        | 4     | 201-267                     | 201             | 351-400                     | 351             | 81-107            | 81    | 76-85                           | 76   | 41-50                            | 41    | 30000 | 30001-35000    |
|                    |                 | 5     | 268-334                     | 268             | 401-450                     | 401             | 108-134           | 108   | 86-95                           | 86   | 51-60                            | 51    | 35000 | 35001-40000    |
| High               | Unhealthy       | 6     | 335-400                     | 335             | 451-500                     | 451             | 135-160           | 135   | 96-105                          | 96   | 61-70                            | 61    | 40000 | 40001-45000    |
|                    |                 | 7     | 401-467                     | 401             | 501-550                     | 501             | 161-187           | 161   | 106-115                         | 106  | 71-80                            | 71    | 45000 | 45001-50000    |
| Very High          | Very Unhealthy  | 8     | 468-534                     | 468             | 551-600                     | 551             | 188-213           | 188   | 116-125                         | 116  | 81-90                            | 81    | 50000 | 50001-55000    |
|                    |                 | 9     | 535-601                     | 535             | 601-650                     | 601             | 214-240           | 214   | 126-136                         | 126  | 91-100                           | 91    | 55000 | 55001-60000    |
| Hazardous          | Hazardous       | 10    | >602                        | 602             | >651                        | 651             | >241              | 241   | >136                            | 136  | >101                             | 101   | 60000 | >60000         |

Table 13: Health messages to be communicated to the public for the different AQI bands.

| AQI       | Levels of Health Concern | Accompanying health messages for at-risk individuals*  | Accompanying health messages for the general population  |
|-----------|--------------------------|--|--|
| Low       | Good                     | Enjoy your usual outdoor activities.   | Enjoy your usual outdoor activities.   |
| Moderate  | Moderate                 | Adults and children with lung problems, and adults with heart problems, who experience symptoms, should consider reducing strenuous physical activity, particularly outdoors.  | Enjoy your usual outdoor activities.   |
| High      | Unhealthy                | Adults and children with lung problems, and adults with heart problems, should reduce strenuous physical exertion, particularly outdoors, and particularly if they experience symptoms. People with asthma may find they need to use their reliever inhaler more often. Older people should also reduce physical exertion. | Anyone experiencing discomfort such as sore eyes, cough or sore throat should consider reducing activity, particularly outdoors. |
| Very High | Very Unhealthy           | Adults and children with lung problems, adults with heart problems, and older people, should avoid strenuous physical activity. People with asthma may find they need to use their reliever inhaler more often.  | Reduce physical exertion, particularly outdoors, especially if you experience symptoms such as cough or sore throat.             |
| Hazardous | Hazardous                | Adults and children with lung problems, adults with heart problems, and older people, should avoid strenuous physical activity. People with asthma may find they need to use their reliever inhaler more often.  | Reduce physical exertion, particularly outdoors, especially if you experience symptoms such as cough or sore throat.             |

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The AQI focuses on health effects people may experience within a few hours or days after breathing polluted air. The index has no bearing on pollution control requirements for specific sources; nor does it serve to implement the national ambient air quality standards (NAAQS) in litigation. Rather, it provides information on air quality and health that will help individual citizens take prudent, self-protective actions to avoid or reduce exposures of concern or avoid contributing to air pollution on days when unhealthy air quality is predicted.

The AQI:

- Sends a clear and consistent message to the public by providing nationally uniform information on air quality;
- Is keyed appropriately to the national ambient air quality standards which have a scientific basis relating to air quality and public health, essentially a way of conveying scientific/medical advice to the public in an easily understood form.
- Is simple and easily understood by the public.

In the future, the AQI will be used for communicating air quality forecasting information to the public.

#### 5.2.3.4 *The National Air Quality Indicator*

The national department has developed a methodology for calculating and ascertaining an indicator to monitor the state and trend of air ambient quality in South Africa, the National Air Quality Indicator (NAQI). The methodology will be published as part of the National Norms and Standards for Air Quality Monitoring during 2018.

Identifying pollutants to be considered in the national indicator is relatively easy as the pollutants must include those for which the National Ambient Air Quality Standards have been set - the criteria pollutants. However, although all monitoring stations are measuring some of the criteria pollutants, they may not be measuring all of the pollutants. At least for the immediate future, the pollutants chosen for the indicator are those:-

- That are considered to be problems at the majority of measurement points, i.e. problem pollutants at a national scale; and
- That are measured at the majority of stations; and where historical data sets are available to measure progress since, at least, 2005.

From these criteria, particulate matter (PM<sub>10</sub> of aerodynamic diameter equal or less than 10 µm) is the first obvious choice with sulphur dioxide (SO<sub>2</sub>) second. There is really no benefit in considering an indicator in respect of pollutants that seldom, if at all, exceed national standards such as carbon monoxide.

The NAQI has been developed to weigh, balance and manipulate data in such a way as to provide a verifiable and reportable measure of air quality at the national scale that is broadly accepted as being an adequate indicator, much like the National Ambient Air Quality Standards (NAAQS) are broadly accepted as a proxy for air that is not harmful to health and well-being. The NAQI will be used by a range of stakeholders from air quality managers to the general public. The main purposes of a NAQI are to:

- Inform the objectives of the AQA (enhancement, protection, governance).
- Monitor national progress in implementing AQA policy targets – towards national compliance by 2020.
- Provide an overall picture on the efficacy of air quality interventions.
- Provide a monitoring tool to measure the effects of policy responses.
- Serve as an environmental air quality indicator in order to assess the condition and reflect air quality trends nationally.
- Provide a tool to support policy-makers in air quality management, policy development, prioritisation and evaluation; and
- Serve as a communication tool on air quality matters by simplifying complex atmospheric observations to plots and figures easily understood by the public.

The indicator has been developed on the following basic principles:

- *Simple, but not simplistic* - As the indicator is meant to provide all South Africans with an indication of the quality of their air as well as whether this quality is improving or getting worse, the indicator must be simple enough for anyone to understand. However, it should not attempt to over-simplify what is actually a very complex concept, i.e.

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the indicator should not end up being regarded as simplistic and of little value by air quality managers.

- *Credibility* - Everyone should have confidence that the indicator provides a fair indication of the quality of their air as well as whether this quality is improving or getting worse.
- *Transparency and complexity* - In order to ensure the credibility of the indicator, methodologies of defining the indicator and the types and sources of data must be fully transparent, i.e. anyone should theoretically be able to generate the indicator.
- *Accuracy and reproducibility* - In order to reinforce the credibility of the indicator, the data used in the generation thereof must be accurate, complete and current. Furthermore, the use of the agreed methodologies must render the same result every time.
- *Sensitivity* - The indicator must be sensitive enough to demonstrate significant changes over time, but must not be so sensitive as to allow dramatic changes resulting from once-off or isolated events.
- *Balance* - As discussed above, the indicator must provide a balanced measure, for e.g. if one solitary measurement reflects non-compliance it would be unfair for the indicator to reflect that the entire nation is non-compliant.

The total number of the NAQI stations across the length and breadth of the country is forty-two (42) (Figure 4 and

APPENDIX 1: NATIONAL AIR QUALITY INDICATOR STATIONS

| Station Name     | Province | District/ Metro          | Local Municipality       | Owner                | Classification                                | Reporting to SAAQIS | Latitude   | Longitude | Pollutants                                       |
|------------------|----------|--------------------------|--------------------------|----------------------|---|---------------------|------------|-----------|--|
| Saltworks        | EC       | Nelson Mandela Bay Metro | Nelson Mandela Bay Metro | COEGA                | Urban   | No                  | -33.763778 | 25.683428 |  |
| Walmer           | EC       | Nelson Mandela Bay Metro | Nelson Mandela Bay Metro | Nelson Mandela Metro | Industrial                                    | No                  | -33.985667 | 25.588083 | PM10, SO2, NOx, O3, CO                           |
| Pelonomi         | FS       | Mangaung Metro           | Mangaung Metro           | Mangaung Metro       | Urban   | No                  | -29.138472 | 26.241917 | SO2, NO, NO2, NOx, CO, PM10, PM2.5               |
| Zamdela          | FS       | Fezile Dabi DM           | Metsimaholo LM           | DEA                  | Suburban (Low Income Residential Settlements) | Yes                 | -26.845083 | 27.855778 | PM10, PM2.5, SO2, NOx, O3, CO, Pb and BTEX       |
| Alexandra        | GP       | Johannesburg Metro       | Johannesburg Metro       | Joburg Metro         | Suburban (Low Income Residential Settlements) | Yes                 | -26.106972 | 28.110556 | PM10, PM2.5, SO2,                                |
| Bedfordview      | GP       | Ekurhuleni Metro         | Ekurhuleni Metro         | Ekurhuleni Metro     | Traffic                                       | Yes                 | -26.178611 | 28.133194 | PM10, SO2, NOx, O3 & CO                          |
| Buccleugh        | GP       | Johannesburg Metro       | Johannesburg Metro       | Joburg Metro         | Traffic                                       | Yes                 | -26.011833 | 28.117556 | PM10, PM2.5, SO2, NOx, O3                        |
| Diepkloof        | GP       | Johannesburg Metro       | Johannesburg Metro       | DEA                  | Urban   | Yes                 | -26.250736 | 27.956447 | PM10, PM2.5, SO2, NOx, O3, CO, Pb and BTEX       |
| Elandsfontein    | GP       | West Rand DM             | Merafong City LM         | Eskom                | Peri-Urban                                    | Yes                 | -26.245517 | 27.417522 | PM10, PM2.5, SO2, NO, NO2, NOx, O3, BCM, Hg, H2S |
| Etwatwa          | GP       | Ekurhuleni Metro         | Ekurhuleni Metro         | Ekurhuleni Metro     | Suburban (Low Income Residential Settlements) | No                  | -26.116611 | 28.475417 | PM10, SO2, NOx, O3 & CO                          |
| Germiston        | GP       | Ekurhuleni Metro         | Ekurhuleni Metro         | Ekurhuleni Metro     | Industrial                                    | No                  | -26.227361 | 28.177333 | PM10, SO2, NOx, O3 & CO                          |
| Olievenhoutbosch | GP       | Tshwane Metro            | Tshwane Metro            | Tshwane Metro        | Suburban (Low Income Residential Settlements) | Yes                 | -25.911611 | 28.093250 | PM10, SO2, NOx, O3 & CO                          |
| Olifantsfontein  | GP       | Ekurhuleni Metro         | Ekurhuleni Metro         | Ekurhuleni Metro     | Industrial                                    | No                  | -25.973123 | 28.237202 | PM10, SO2, NOx, O3 & CO                          |
| Rosslyn          | GP       | Tshwane Metro            | Tshwane Metro            | Tshwane Metro        | Industrial                                    | Yes                 | -25.625167 | 28.094778 | PM10, SO2, NOx, O3, CO, VOC                      |
| Soshanguve       | GP       | Tshwane Metro            | Tshwane Metro            | Tshwane Metro        | Suburban (Low Income Residential Settlements) | Yes                 | -25.492000 | 28.093733 | PM10, SO2, NOx, O3 & CO                          |
| Springs          | GP       | Ekurhuleni Metro         | Ekurhuleni Metro         | Ekurhuleni Metro     | Urban   | No                  | -26.270361 | 28.416000 | PM10, SO2, NOx, CO                               |
| Vanderbijlpark   | GP       | Sedibeng DM              | Emfuleni LM              | Sedibeng DM          | Industrial                                    | Yes                 | -26.688639 | 27.816667 | SO2, CO  |
| CBD - RBCAA      | KZN      | Uthungulu DM             | Uthungulu DM             | RBCAA                | Traffic                                       | Yes                 | -28.744700 | 32.049242 | PM10, SO2  |

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|                           |     |                        |                               |                 |   |     |            |           |  |
|---------------------------|-----|------------------------|-------------------------------|-----------------|---|-----|------------|-----------|--|
| City Hall - Durban        | KZN | eThekweni Metro        | Ethekewini Metro              | eThekweni Metro | Traffic                                       | Yes | -29.961160 | 30.038830 | PM10, NOx                                      |
| Ganges                    | KZN | eThekweni Metro        | Ethekewini Metro              | eThekweni Metro | Industrial                                    | Yes | -29.948500 | 30.964528 | PM10, SO2, NOx                                 |
| King Shaka                | KZN | eThekweni Metro        | Ethekewini Metro              | ACSA            | Industrial                                    | No  | -29.622972 | 31.102639 |  |
| Settlers                  | KZN | eThekweni Metro        | Ethekewini Metro              | eThekweni Metro | Urban   | Yes | -29.958750 | 30.978750 | SO2  |
| Southern Works            | KZN | eThekweni Metro        | Ethekewini Metro              | eThekweni Metro | Traffic                                       | Yes | -29.956944 | 30.973139 | PM10, PM2.5, SO2, NOx                          |
| Lephalale                 | L   | Waterberg DM           | Lephalale LM                  | DEA             | Urban   | Yes | -23.681918 | 27.722316 | PM10, PM2.5, SO2, NOx, O3, CO & BTEX           |
| Phalaborwa                | L   | Mopani DM              | Ba-Phalaborwa LM              | L Province      | Urban   | Yes | -23.932049 | 31.139471 | SO2,NO, NO2, NOx, O3, PM10, PM2.5,             |
| Ermelo                    | MP  | Gert Sibande DM        | Msakaligwa LM                 | DEA             | Suburban (Low Income Residential Settlements) | Yes | -26.493361 | 29.968028 | PM10, PM2.5, SO2, NOx, O3, CO, Pb, Hg and BTEX |
| Middleburg - DEA          | MP  | Nkangala DM            | Steve Tshwete LM              | DEA             | Urban   | Yes | -25.796111 | 29.462778 | PM10, PM2.5, SO2, NOx, O3, CO, Pb, Hg and BTEX |
| Sasol Club                | MP  | Gert Sibande DM        | Govan Mbeki LM                | Sasol           | Industrial                                    | Yes | -26.550639 | 29.079028 | PM10, PM2.5, SO2, NO, NO2, NOX, O3, CO & H2S   |
| Karoo                     | NC  | Namakwa DM             | Namakwa District Municipality | SAWS            | Suburban (Low Income Residential Settlements) | Yes | -31.398641 | 19.140214 | PM10, PM2.5, SO2, Nox, NO, NO2, BC and O3      |
| Mafikeng                  | NW  | Ngaka Modiri Molema DM | Mafikeng LM                   | NW Province     | Background                                    | Yes | -25.830667 | 25.611583 | SO2  |
| Marikana Community Centre | NW  | Bojanala DM            | Rustenburg LM                 | Rustenburg LM   | Urban   | Yes | -25.698444 | 27.480111 | PM10, SO2, NOx, O3 & CO                        |
| Welwegund                 | NW  | Dr Kenneth Kaunda DM   | Tlokwe Local Municipality     | NW University   | Background                                    |     | -26.569444 | 26.939167 |  |
| Xanadu                    | NW  | Bojanala DM            | Madibeng LM                   | SAWS            | Background                                    | Yes | -25.747122 | 27.924610 | PM10, PM2.5, SO2, Nox, NO, NO2, BC and O4      |
| Cape Point                | WC  | Cape Town Metro        | Cape Town Metro               | SAWS            | Background                                    | Yes | -34.353292 | 18.489764 | CO, NO & O3                                    |
| City Hall - CT            | WC  | Cape Town Metro        | Cape Town Metro               | Cape Town Metro | Traffic                                       | Yes | -33.925285 | 18.423839 | NOx, SO2 & CO                                  |
| Foreshore                 | WC  | Cape Town Metro        | Cape Town Metro               | Cape Town Metro | Traffic                                       | Yes | -33.913833 | 18.425167 | PM10, NOx, VOC                                 |
| George                    | WC  | Eden DM                | George LM                     | WC Province     | Suburban (Low Income Residential Settlements) | Yes | -33.981219 | 22.473231 | PM10, SO2, NOx, O3, CO                         |
| Khayelitsha - CT Metro    | WC  | Cape Town Metro        | Cape Town Metro               | Cape Town Metro | Industrial                                    | Yes | -34.015583 | 18.653556 | PM10, PM2.5, NOx, SO2, VOC                     |



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|               |    |                   |                  |                 |  |     |            |           |                             |
|---------------|----|-------------------|------------------|-----------------|--|-----|------------|-----------|-----------------------------|
| Potsdam       | WC | Cape Town Metro   | Cape Town Metro  | Cape Town Metro | Suburban (Medium & Upper Residential Settlement) | Yes | -33.837825 | 18.524824 | VOC                         |
| Somerset West | WC | Cape Town Metro   | Cape Town Metro  | Cape Town Metro | Suburban (Medium & Upper Residential Settlement) | Yes | -34.077355 | 18.831800 | SO2                         |
| Table View    | WC | Cape Town Metro   | Cape Town Metro  | Cape Town Metro | Suburban (Medium & Upper Residential Settlement) | Yes | -33.819667 | 18.514333 | PM10, PM2.5 NOx, SO2, H2S,  |
| Worcester     | WC | Cape Winelands DM | Breede Valley LM | WC Province     | Suburban (Medium & Upper Residential Settlement) | Yes | -33.627500 | 19.468361 | PM10, SO2, NOx, O3, CO, H2S |

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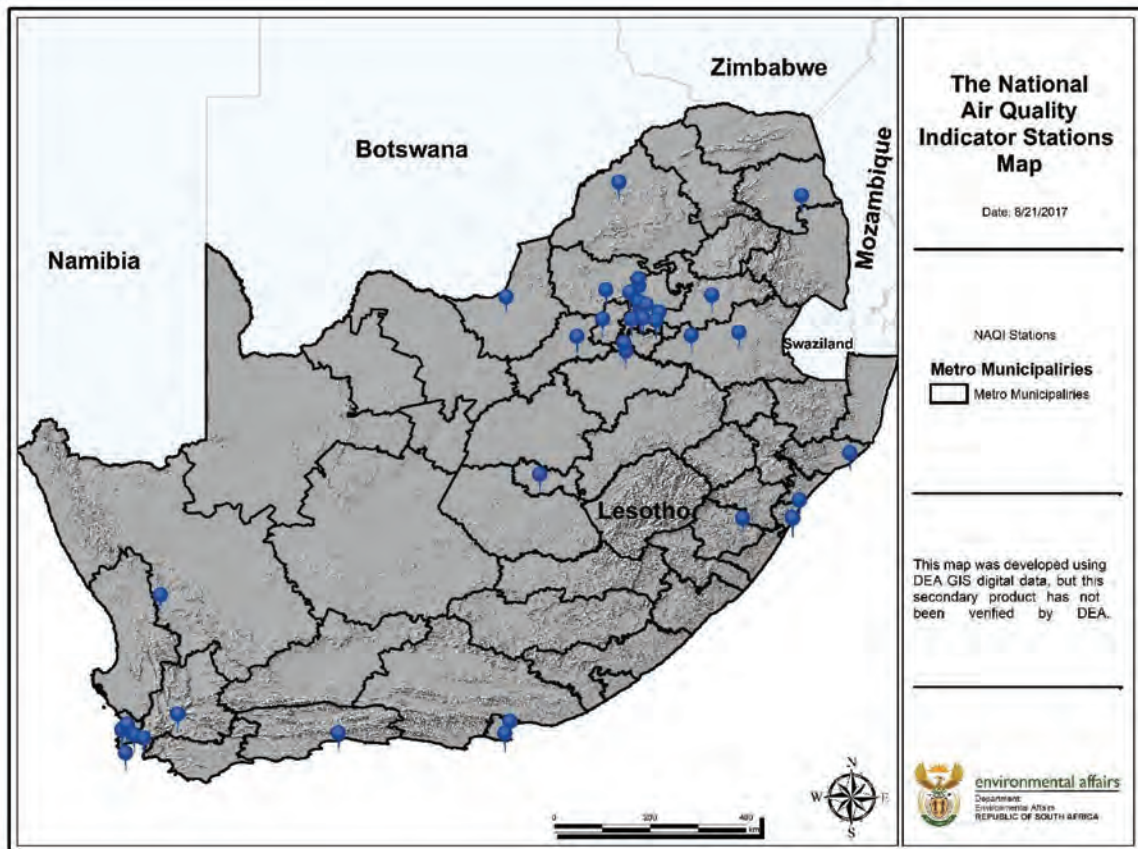


Figure 4: Location of National Air Quality Indicator Stations

## 5.2.4 South African Atmospheric Emission Licence and Inventory Portal

The national department has established the South African Atmospheric Emission Inventory and Licence Portal (SAAELIP). SAAELIP is an online portal for the management of AEL as well as the estimation, compilation and reporting of atmospheric emission inventories nationally. SAAELIP provides a seamless integration between the management of AELs and the reporting of atmospheric emissions. The portal is comprised of two components, namely; the System for National Atmospheric Emission Licensing (SNAEL) and the National Atmospheric Emission Inventory System (NAEIS).

## 5.2.4.1 System for National Atmospheric Emission Licensing (SNAEL)

SNAEL provides the ability for Atmospheric Emission Licensing Authorities to:

- Process AEL applications and issues PAEL/AEL applications online.
- Schedule licensing related inspections and track inspection results.
- Manage online compliance reporting.
- Facilitate communication with the AEL holders on the status of the emission inventory annual reports.

For the regulated and listed activities, SNAEL will allow for the AEL holder to:

- Apply and submit an AEL online
- Track the status of an application
- Submit emission compliance reports online
- Track historical versions of all applications and emissions reports

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In an effort to improve transparency and promote access to information, the SNAEL also affords the public to view non-confidential information of the AEL. All AEL management matters to be undertaken under Chapter 5 of the NEMAQA shall be undertaken through SNAEL with immediate effect. All facilities that had been granted AELs through a manual application process and outside of the SNAEL have up until 31 March 2020 to register their details on the SNAEL and upload such AELs.

#### 5.2.4.2 National Atmospheric Emission Inventory System (NAEIS)

NAEIS is an online system for the national reporting of atmospheric emissions. NAEIS reporting regulations require annual emissions inventory reports from listed activities, Mines and Quarries, Section 23 operating on those facilities with AELs, to be reported in the form necessary for the compilation of the national emission inventory. The system also provide an emission inventory reporting platform for non-listed activities, including all sector categories from the Intergovernmental Panel for Climate Change (IPCC) such as Energy; Industrial Processes and Product Use (IPPU); Agriculture, Forestry and Other Land Use (AFOLU) and Waste. Emissions are estimated inside NAEIS or outside the system depending on the emission sources types. The NAEIS also provides guidance and methodologies for the compilation both air pollutants and greenhouse gases emission inventories following best international practices. These tools will be available for emission inventory compilation by all spheres of government. The NAEIS also serve as a platform for current and future emissions estimations. The NAEIS includes the following with regard to emission inventories:

- Details of emissions from all source types (e.g. point, mobile, area, line, volume).
- Details of emissions by pollutant and greenhouse gas type.
- Norms and standards for emission inventories compilation.
- Examples of emission inventories compiled in South Africa.
- Search tools to interrogate the inventories.
- Details of licensed emissions.
- A database of emission factors for various activities.
- Documentation on Best Available Techniques (BAT).

Table 14: National Atmospheric Emissions Inventory Modules development targets

| Key Milestone, Product or Output                                 | Timeframe |
|--|-----------|
| Emission Inventory tools to be developed in the SAAQIS           |           |
| Emission inventory compilation tool                              | Ongoing   |
| Top-down and bottom-up Greenhouse Gas Inventory compilation tool | 2017/18   |
| Emission data reporting facilitation tool                        | Ongoing   |
| Emission data report/view generating tool                        | Ongoing   |
| Emission data import facility component                          | Ongoing   |
| Emission data assessment tool                                    | Ongoing   |
| Emission data export tool  | Ongoing   |
| Emission inventory guidelines, manuals and reporting regulations | Ongoing   |

#### 5.2.4.3 Atmospheric emission inventory information management

Emission inventory information for air pollutants and greenhouse gases from all source sector types will be accessible from the National Atmospheric Emission Inventory System (NAEIS). A National Atmospheric Emission Inventory System Data Management Policy will be developed to specify the protocols for data management and levels of accessibility for all users including stakeholders/general public. This data management policy and associated work packages will also give guidance with regard to the specific location of the NAEIS according to legal mandates, objectives of and the desired integrity of the system.

### 5.3 Problem identification and prioritisation

#### 5.3.1 Introduction

There are a number of areas in South Africa that have recognised air quality problems (see Paragraph 5.3.4). These are areas where there are industrial activities resulting in emissions at various levels depending on quantities emitted and

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number of pollutant sources per area; low-income residential areas using coal and wood stoves for cooking and heating; and other sources of pollution that are identified in various AQMPs. As South Africa is a relatively dry country, dust pollution is also problematic. Sources of dust include construction, agricultural and industrial activities and mining and dust from un-surfaced roads in a large number of rural villages and low-income urban residential areas is a significant air pollution problem. Vehicle emissions from trucks and private vehicles exacerbate the air pollution problem.

A standard approach is required to identify situations of poor air quality and to quantify the scale and nature of the non-compliance in order to prioritise its importance for air quality management intervention. Prioritising poor air quality situations allows for a structured and coordinated approach to addressing the issues, including the focussing of resources. There are a number of sections in the AQA that deal with problem identification and prioritisation, including, among others:

- The Minister must identify pollutants which, through ambient concentrations, bioaccumulation, deposition or in any other way, present a threat to health, well-being or the environment or which the Minister reasonably believes present such a threat (Section 9(1)(a));
- The Minister may declare an area as a priority area if the Minister reasonably believes that: ambient air quality standards are being, or may be, exceeded in the area, or any other situation exists which is causing, or may cause, a significant negative impact on air quality in the area; and the area requires specific air quality management action to rectify the situation (Section 18(1));
- The Minister must publish a list of activities which result in atmospheric emissions and which the Minister reasonably believes have or may have a significant detrimental effect on the environment, including health, social conditions, economic conditions, ecological conditions or cultural heritage (Section 21(1)(a));
- The Minister may declare any appliance or activity, or any appliance or activity falling within a specified category, as a controlled emitter if such appliance or activity, or appliances or activities falling within such category, result in atmospheric emissions which through ambient concentrations, bioaccumulation, deposition or in any other way, present a threat to health or the environment or which the Minister reasonably believes presents such a threat (Section 23(1));
- The Minister may, by notice in the *Gazette*, declare a substance or mixture of substances which, when used as a fuel in a combustion process, result in atmospheric emissions which through ambient concentrations, bioaccumulation, deposition or in any other way, present a threat to health or the environment or which the Minister reasonably believes present such a threat, as a controlled fuel (Section 26(1)); and
- The Minister may declare any substance contributing to air pollution as a priority air pollutant and require persons falling within a specified category to submit and implement a pollution prevention plan in respect of the priority air pollutant (Section 29(1)).

The underlying requirement for problem identification and prioritisation is information. Some guidelines are provided here for identifying and prioritising pollutants, emitters and areas of concern.

### 5.3.2 Identifying and prioritising pollutants of concern

Section 9 of the AQA provides the Minister with a legal mandate to identify a national list of pollutants of in the ambient which present a threat to human health, well-being or environment, herein referred to as criteria pollutants, and establish acceptable ambient air quality standards for such pollutants. Eight criteria pollutants have been identified to date (see Table 15) in accordance with Section 9 of the AQA. Ambient air quality standards have been established and gazetted for all of these criteria pollutants. In time and according to defined/identified need, additional pollutants are added to the list. These future pollutants can be categorised as either of national or provincial significance. In the case of pollutants that have a provincial significance the MEC may declare these as provincial pollutants of concern. The following guidelines will be applied when identifying and prioritising pollutants of concern:

- The possibility, severity and frequency of effects, with regard to human health and the environment as a whole, with irreversible effects being of special concern;
- Ubiquitous and high concentrations of the pollutant in the atmosphere;
- The feasibility of monitoring the air pollutant;
- Potential environmental transformations and metabolic alterations of the pollutant, as these changes may lead to the production of chemicals with greater toxicity or introduce other uncertainties;
- Persistence in the environment, particularly if the pollutant is not biodegradable and able to accumulate in humans,

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the environment or food chains;

- The impact of the pollutant taking the following criteria into consideration;
- Size of the exposed population, living resources or ecosystems;
- The existence of particularly sensitive receptors in the zone concerned;
- Pollutants that are controlled by international conventions.

Furthermore, the Minister may declare any substance contributing to air pollution as a priority pollutant in terms of section 29 of AQA. Any person conducting an activity which involves emission of a priority pollutant may be required to develop, submit and implement an atmospheric pollution prevention plan in the manner that has been prescribed by the minister.

Table 15: Pollutants of concern

| Criteria pollutants declared in terms of section 9 of AQA  | Priority Pollutants declared in terms of section 29 of AQA   | Possible Future Pollutants of Concern   |   |
|--|--|---|---|
|  |  | National Pollutants   | Local Pollutants  |
| Sulphur dioxide (SO <sub>2</sub> );<br>Nitrogen dioxide (NO <sub>2</sub> );<br>Ozone (O <sub>3</sub> );<br>Carbon monoxide (CO);<br>Lead (Pb);<br>Particulate matter (PM <sub>10</sub> );<br>Particulate matter (PM <sub>2.5</sub> );<br>Benzene (C <sub>6</sub> H <sub>6</sub> ). | Carbon dioxide (CO <sub>2</sub> )<br>Methane (CH <sub>4</sub> )<br>Nitrous oxide (N <sub>2</sub> O)<br>Hydrofluorocarbons (HFCs)<br>Perfluorocarbons (PFCs)<br>Sulphur hexafluoride (SF <sub>6</sub> ) | Mercury (Hg);<br>Dioxins;<br>Furans;<br>POPs;<br>Other VOCs;<br>N <sub>2</sub> O; | Chrome (Cr <sub>6</sub> <sup>+</sup> );<br>Fluoride (particulate and gas);<br>Manganese (Mn).<br>Hydrogen Sulphide (H <sub>2</sub> S)<br>Asbestos<br>Black carbon |

### 5.3.3 Identifying and prioritising emitters of concern

The following factors must be considered when identifying and prioritising emitters of concern:

- Emitters located in relatively close proximity to sensitive receptors, e.g. residential areas, schools, hospitals or sensitive ecological areas;
- Emitters of pollutants of concern based on volumes of emission and the nature of the pollutant, i.e. those identified in Table 15;
- Emitters that cannot, or do not, operate successfully within the conditions of their AEL;
- Emitters that are not regulated by an AEL, but emit pollutants identified to be of concern;
- Peak emissions in short time steps, and;
- Emitters of pollutants identified by multilateral environmental agreements that are ratified by South Africa.

### 5.3.4 Identifying and prioritising areas of concern

Air quality areas of concern are all areas where the ambient air quality does not comply with the national ambient air quality standards. In some cases this includes areas where there is sufficient evidence suggesting that the area(s) will not be able to comply with national ambient air quality standards in the near future.

#### 5.3.4.1 National and Provincial Priority Areas of Concern

According to section 18 of AQA, the minister (in case of national) or the MEC (for province) may declare an area as a national or provincial priority area respectively if either believes that:-

- Ambient air quality standards are being, or may be, exceeded in the area, or any other situation exist which is causing, or may cause, a significant negative impact on air quality in the area; and
- The area requires specific air quality management action to rectify the situation.

The Minister or MEC may at a later stage withdraw the declaration of a priority area if the area has achieved compliance with ambient air quality standards for a period of at least two years. The process for declaration and management of priority area is summarised in Figure 5: Summary of a process for priority area declaration and management below:

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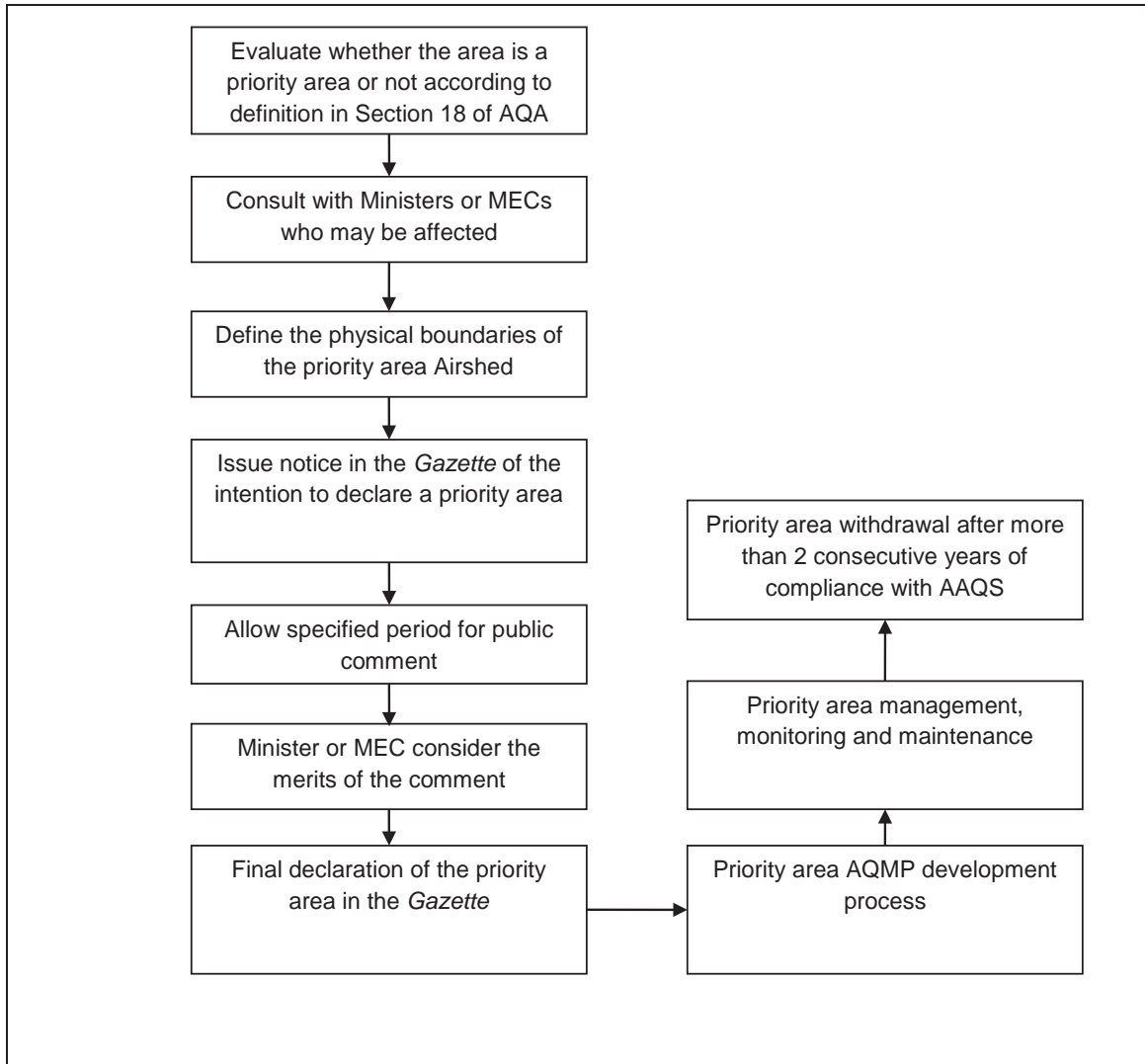


Figure 5: Summary of a process for priority area declaration and management

At national level, the following national priority areas (Table 16 below) have been declared by the Minister. No provincial priority areas have been declared to-date.

Table 16: Declared national priority areas

| Priority area                       | Status  |
|-------------------------------------|---|
| Vaal Triangle Airshed Priority Area | <ul style="list-style-type: none"> <li>• Declared in 2006.</li> <li>• AQMP published in 2009, and</li> <li>• Midterm review was conducted in 2013.</li> </ul> |
| Highveld Priority Area              | <ul style="list-style-type: none"> <li>• Declared in 2008.</li> <li>• AQMP published in 2012, and</li> <li>• Midterm review conducted in 2017</li> </ul>      |
| Waterberg Bojanala Priority Area    | <ul style="list-style-type: none"> <li>• WBPA was declared in 2013, and</li> <li>• AQMP published in 2015</li> </ul>  |

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5.3.4.2 *Municipal Areas of Concern*

Since 2005, the DEA has attempted to identify areas of concern within the republic with emphasis mostly on Metropolitan and District Municipalities. Such areas were listed in table 24 of the 2007 National Framework and Table 19 in the 2012 National Framework. In these tables, the National Framework classified municipalities as either:

- *Acceptable* – generally good air quality;
- *Potentially Poor* – air quality may be poor at times or deteriorating; or
- *Poor* – ambient air quality standards regularly exceeded.

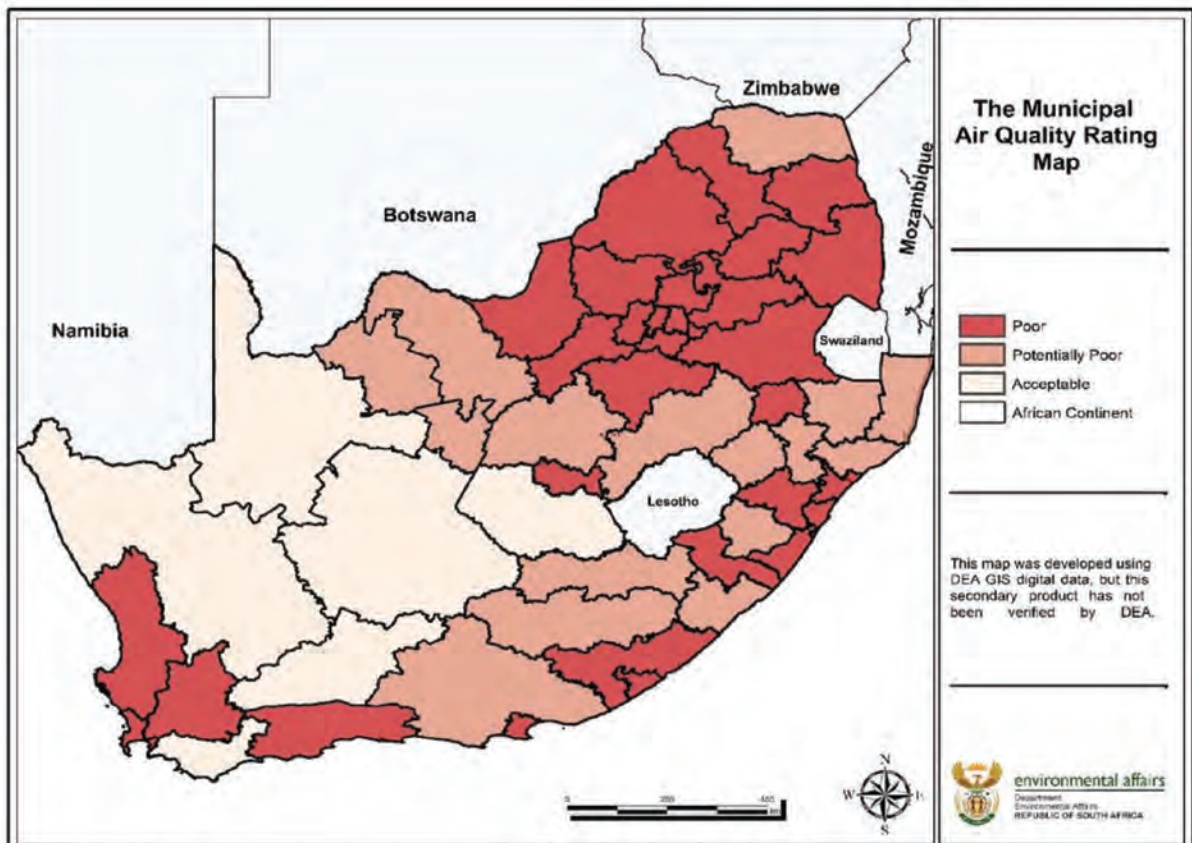


Figure 6 : Metropolitan and District Municipalities Air Quality Ratings

The most recent classification of municipalities of concern is provided in Figure 6 : Metropolitan and District Municipalities Air Quality Ratings and APPENDIX 2: MUNICIPAL AIR QUALITY RATING and is based on the prevalence of sources of emissions for each source category as follows:

- Source category 1 = Listed activities : Prevalence = The number of Section 21 facilities reporting to the NAEIS,
- Source category 2 = Domestic fuel burning: Prevalence = The number of households using coal/fuelwood/ paraffin according to Statistics South Africa,
- Source category 3 = Vehicle emissions: Prevalence = The predicted vehicle emissions based on vehicle sales and fuel sales, and
- Source category 4 = Mining emissions: Prevalence = the number of mines.

Each municipality (district level) was classified as having either lower, middle or upper prevalence value for each source category. The classification into either upper, middle or lower was based on the relative prevalence to other districts. Where the municipality was in the upper range in any (1 or more) category (ies), then the municipality was classified as poor. Where the municipality was in the middle range in two or more of the sources above, then the municipality was also classified as poor. Where the municipality was in the middle range for all sources it was classified as “potentially poor”. Lastly, where the municipality was in the lower range for all sources then it was classified as acceptable. The final

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categorisation was verified by ambient air quality data where possible. It is believed that in future, when the country-wide monitoring network improves, this classification will be based solely on monitoring data.

Municipalities that are classified as poor or potentially poor should receive priority attention in terms of air quality management planning and priorities for resource allocation. This such classification has implications terms of ambient air quality monitoring as follows:

- Municipalities where ambient air quality is classified as poor – Must undertake continuous ambient air quality monitoring
- Municipalities where ambient air quality is classified as potentially poor – Must undertake continuous ambient air quality monitoring in its localised pollution hotspots and passive monitoring elsewhere within the municipality
- Municipalities where ambient air quality is classified as acceptable – Must undertake continuous screening to inform the need for continuous monitoring in localised hotspots.

## 5.4 Strategy development

### 5.4.1 Introduction

This section of the National Framework provides details on the mechanisms and norms and standards to address the air quality issues that have been identified and prioritised in the previous section. The various sections that follow, namely Awareness-raising, Standard Setting, Regulations and Air Quality Management Planning are directly aligned with the stages of the governance cycle (Figure 1).

### 5.4.2 Awareness-raising

The AQA does not provide specifically for awareness-raising activities, however, awareness-raising is one of the strategies identified in the air quality governance cycle depicted in Figure 1 aimed at addressing air pollution problems. In contrast to the formulation of policy and legislation, and the setting of norms and standards, awareness-raising aims to bring about positive changes in air quality by voluntary rather than forced means. Improvements in public knowledge through environmental education, sharing of knowledge and experience, and access to information, can lead to voluntary changes that are often more sustainable than forced changes initiated by legislation.

Awareness-raising is directly linked to two of the cross-cutting issues in the National Framework, namely capacity development (See Paragraph 5.9.2) and information dissemination (See Paragraph 5.9.3). By raising awareness, community well-being and empowerment is promoted and a contribution is made to capacity development. It is important to recognise the value and potential of well-informed and committed citizens for effecting positive change in air quality. Meaningful public involvement in air quality management issues will be strongly encouraged (See Paragraph 5.9.1). Access to information is a key factor in raising awareness and increasing the knowledge of the public (See Paragraph 5.2.1).

Strategies to raise awareness will emphasise the adverse impacts of air pollution, climate change and ozone layer protection, human health and the environment; and the benefits of clean air. All spheres of government have a responsibility to raise awareness around air quality issues amongst the public, the private sector and their own departments. Strategies to raise awareness include, among others the following:

- Media campaigns in the press, on radio, television, bill boards, etc.
- Public seminars and workshops;
- Distribution of information material
- Effective education programmes developed for primary and secondary schools taking into account the local context;
- The organisation of clean air events to coincide with recognised events such as World Environment Day; and
- Maintenance of an informative and up-to-date website.

### 5.4.3 Standard setting

The AQA provides for the setting of standards for:

- Ambient air quality;
- Listed activities;
- Controlled emitters, and
- Controlled fuels.

The setting of these standards shall follow problem identification and prioritisation process. Depending on the nature of



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the standard, the process followed in establishing the standards must consider various factors such as, but not limited to:

- The health, safety and environmental protection objectives;
- Analytical methodology;
- Technical feasibility;
- Monitoring capability; and
- Socio-economic consequences.

#### 5.4.3.1 The generic standard setting process

The process of developing standards (for ambient air quality, emitted air pollutants by listed activities, controlled emitters and controlled fuels) in terms of AQA is summarised in Figure 7 below.

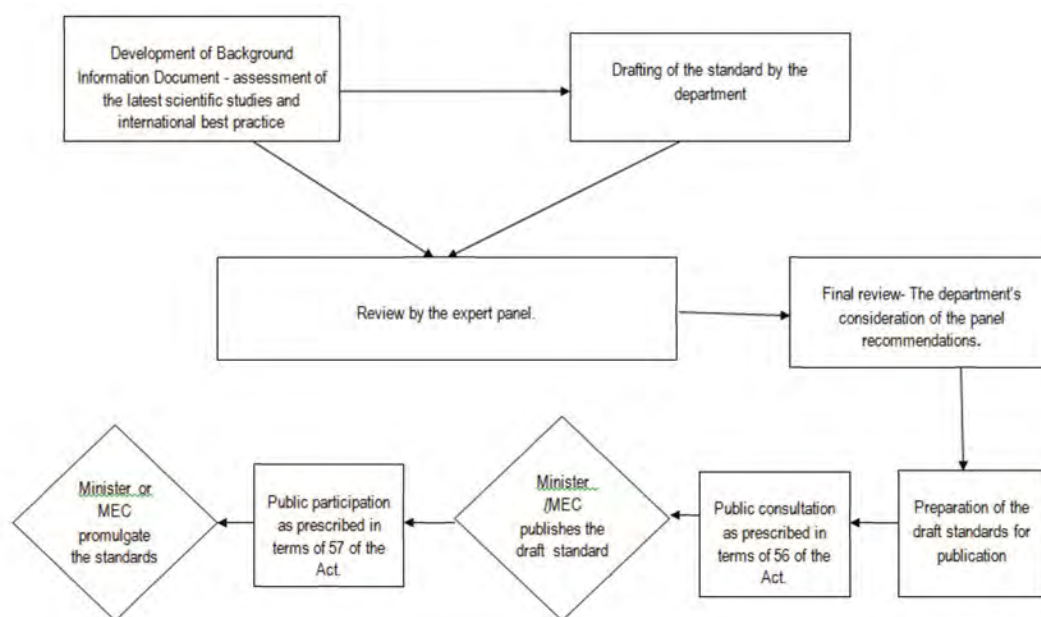


Figure 7: The generic standard setting process

The process in figure above can be divided into three main steps namely: standard drafting, review by the technical and affected sectors, and publication of standards

#### Standard drafting

According to AQA, the Minister must (or MEC or municipality may) identify substances or mixtures of substances in ambient air (Section 9(1)(b)), emitted pollutants (Section 9(1)(c)), controlled emitters (Section 23(1)) or controlled fuels (Section 26(1)) that present a threat to health, well-being or the environment through any means. The identification of these will consider the guidelines provided on problem identification and prioritisation in Paragraph 5.2.3.4 of this document.

During the standard setting process, the national or provincial department will assess the latest scientific and technological information about either the pollutant or emission source (in case of an emitter) that present a threat to environment or well-being. This assessment will include but not limited to health and environmental risk assessment, establishment of potential to emit; possible control measures and any other factor that may be necessary for decision-making.

#### Review of proposed standard by expert panel

The department will establish and chair the expert panel for the review of recommended standards. This expert panel will include, but not necessarily be limited to representatives from: the national department, affected national departments, provincial and municipal government, industry, business, civil society and the academia. In this regard, the department, together with the relevant organisations will make every effort to ensure that the membership of the expert panel is representative and balanced.

In developing the recommendation on the standard, the expert panel shall follow specific processes outlined for ambient air quality standards, and for emission standards for listed activities, controlled emitters and controlled fuels. The role of

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the expert panel is to undertake an independent review of the standard proposed by an organ of state based on the latest scientific information.

Once the expert panel has submitted its findings/review outcomes, the department must establish the standard in accordance with AQA. In terms of Section 56(2), the standard setting process must include: (a) consultations with all Cabinet members whose areas of responsibility will be affected by the standards, (b) consultations with the MECs responsible for air quality in each province that will be affected by the standards, and (c) allow public participation in the process in accordance with Section 57.

*Publication of the standard*

With regard to Section 57(1) of the AQA the Minister must give notice of the proposed standards in: (a) the Gazette; and (b) at least one newspaper distributed nationally. In accordance with Section 57(2) of the AQA the notice described above must: (a) invite members of the public to submit written representations on or objections to the standards to the Minister within an appropriate time (a minimum of 30 days) of publication of the notice in the Gazette; and (b) contain sufficient information to enable members of the public to submit meaningful representations or objections.

In respect of Section 57(3), the Minister may in appropriate circumstances allow any interested person or community to present oral representations or objections to the Minister, or a person designated by the Minister. In terms of Section 57(4), the Minister must give due consideration to all representations or objections received or presented before setting the standards.

In considering the technical complexity that may be associated with these standards, the Minister will positively consider a comment period longer than the minimum requirement.

*5.4.3.2 South African national ambient air quality standards*

*Introduction*

In order to uphold the constitutional right to an environment that is not harmful to health and well-being, the setting of ambient air quality standards is mandatory. This document provides clarity on how these standards will be set.

Ambient air quality standards are defined in the Integrated Pollution and Waste Management policy (IP&WM, 2000) as those that define "*targets for air quality management and establish the permissible amount or concentration of a particular substance in or property of discharges to air, based on what a particular receiving environment can tolerate without significant deterioration*".

In line with the World Health Organisation's position, the primary aim of ambient air quality standards is to provide a uniform basis for the protection of public health and ecosystems from the adverse effects of air pollution, and to eliminate or reduce to a minimum, exposure to those pollutants that are known or likely to be hazardous.

Ambient standards therefore provide the benchmark for air quality management and governance. Examples of how ambient standards are used are as follows:

- To objectively define what quality of ambient air South Africans agree is not harmful to their health and well-being; To inform decisions on what type of developments are appropriate in specific areas;
- To use as a yardstick to measure air quality management performance;
- To provide the basis for triggering air quality governance interventions.

The IP&WM Policy clearly recognises both the political and technical dimensions of standard setting, namely:

- The universal, consultative application of the standards-setting process, taking into account the needs of, and information possessed by, the polluter, government departments, the scientific community and civil society;
- Guidelines for the development of the approach to, and the setting of standards, drawn up as part of the national strategies in collaboration with all relevant parties;
- The provision of access for civil society to the standards-setting process and the standards themselves, in accordance with the commitment to more readily available air quality management information.

*Process for ambient air quality standards setting*

The standards setting process is more than just the identification of the defined standard of a specific pollutant. A number of factors beyond the exposure-response relationship need to be taken into account. These factors include understanding the current concentration of pollutants and exposure levels of the population, the specific mixture of air pollutants, and the specific social, economic and cultural conditions encountered within a country. A technical and legal process must be followed to ensure the proposed ambient air quality standards can be achieved in practice and at a justifiable cost.

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This process also includes the review of all available toxicological and epidemiological information and all available information of the effects on the receiving environment. The specific standard setting process is depicted in Figure 8: The standard setting process for ambient air quality and includes:

- Identification of critical factors for health impact;
- Identification of sensitive sub-populations;
- Review of available databases for health status;
- Review of available databases for ambient air quality information, and
- Review and assessment of international guidelines and standards.

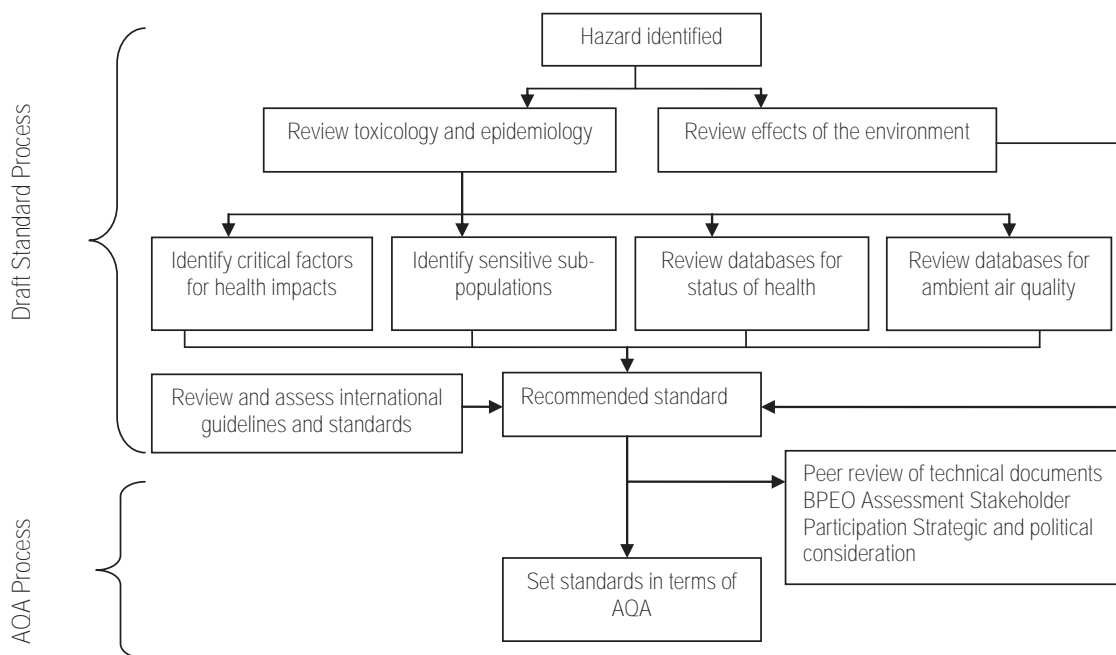


Figure 8: The standard setting process for ambient air quality

A standard may have many components that define it as a "standard". These components may include some or all of the following:

- *Limit values* – a numerical value associated with a unit of measurement and averaging period that forms the basis of a standard;
- *Averaging period* – a period of time over which an average value is determined;
- *Permissible frequencies of exceedance* - a frequency (number/time) related to a limit value representing the tolerated exceedance of that limit value, i.e. if exceedances of the limit value are within the tolerances, then there is still compliance with the standard;
- *Measurement method*- a scientifically accepted standard reference method ; and
- *Compliance time frames* – a date when compliance with the standard is required. This provides a transitional period that allows for activities to be undertaken ensuring compliance by the compliance date.

Given the above, a standard often comprises a limit value for an averaging period with associated tolerances and compliance time frames.

The limit values (concentrations) are based on a scientific process. A further review of the limit values and a feasibility assessment is however required in order to establish ambient air quality standards that includes amongst other, political and socio-economic considerations, which are agreed by all South Africans. This further process includes:

- Technical feasibility, i.e. is it possible to monitor the pollutant with the accuracy required by the proposed limit value?
- Economic feasibility, i.e. can the proposed limit values for the selected pollutant be achieved in practice at an

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affordable cost?

- Cost-benefit, i.e. is the cost of achieving the proposed limit value offset by similar reductions in the externalised cost to society associated with current levels of the pollutant?
- Public participation that assures, as far as possible, social equity or fairness, and understanding of the scientific and economic consequences.
- Socio-economic considerations, e.g. consideration of the social and economic implications of compliance or non-compliance.
- Strategic and political considerations, e.g. considerations of ambient standards in energy planning.

#### 5.4.3.3 Listed activities and related emission standards

##### Introduction

One of the tools for controlling industrial emissions to the atmosphere is the traditional permit or licence which identifies activities that may only operate if they are correctly permitted to do so by the regulatory authority, and only if the conditions set in the permit or licence are met. This form of regulation was the basis for regulatory control of industrial emissions in terms of the APPA and has been repeated, with some significant modifications, in the AQA.

Section 21 of the AQA states that the Minister must publish a list of activities which result in atmospheric emissions, and which he/she reasonably believes have or may have a significant detrimental effect on the environment, including health, social conditions, economic conditions, ecological conditions or cultural heritage. The list applies nationally. The MEC may publish a list of activities which applies to the relevant province only.

Once identified, these activities are known as Listed Activities and require an AEL or provisional AEL in order to operate. Section 21 of the AQA also requires the setting of minimum emission standards for specified pollutants or mixtures of substances emitted by the identified activities. The permissible amount, volume, emission rate or concentration of the pollutant or mixture of pollutants must be specified as well as the manner in which measurements of such emissions must be carried out.

To this end, the Minister has in March 2010 published the first list of activities and their associated minimum emission standards in the gazette (Government Gazette No.33064, Notice No.248 of 31 March 2010). The list was revised and the amended list was promulgated in November 2013 (Government Gazette No 37054, Notice No. 893 of 22 November 2013). This list provides the minimum requirements for emissions control and reporting in the country. Table 17 provides the activities listed on this Notice:

Table 17: The 2013 list of activities and associated emissions standards

| The 2013 List of Activities  |   |
|--|---|
| Categories   | Sub-Categories  |
| 1. Combustion Installations  | Subcategory 1.1 Solid Fuel Combustion Installations<br>Subcategory 1.2: Liquid Fuel Combustion Installations<br>Subcategory 1.3: Solid Biomass Combustion Installations<br>Subcategory 1.4: Gas Combustion Installations<br>Subcategory 1.5 Reciprocating Engines<br>Subcategory 1.6: Waste Co-feeding Combustion Installations |
| 2. Petroleum Industry, the Production of Gaseous and Liquid Fuels as well as Petrochemicals from Crude Oil, Coal, Gas or Biomass | Subcategory 2.1: Combustion Installations<br>Subcategory 2.2: Catalytic Cracking Units<br>Subcategory 2.3: Sulphur Recovery Units<br>Subcategory 2.4: Storage and Handling of Petroleum Products<br>Subcategory 2.5: Industrial Fuel Oil Recyclers  |
| 3. Carbonisation and Coal Gasification   | Subcategory 3.1: Combustion Installations<br>Subcategory 3.2: Coke Production<br>Subcategory 3.3: Tar Processes<br>Subcategory 3.4: Char, Charcoal and Carbon black Production  |

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|   |   |
|---|---|
|   | Subcategory 3.5: Electrode Paste Production<br>Subcategory 3.6: Synthetic Gas Production and Cleanup  |
| 4. Metallurgical Industry                   | Subcategory 4.1: Drying and Calcining<br>Subcategory 4.2: Combustion Installations<br>Subcategory 4.3: Primary Aluminium Production<br>Subcategory 4.4: Secondary Aluminium Production<br>Subcategory 4.5: Sinter Plants<br>Subcategory 4.6: Basic Oxygen Furnaces<br>Subcategory 4.7: Electric Arc Furnaces (Primary and Secondary)<br>Subcategory 4.8: Blast Furnaces<br>Subcategory 4.9: Ferro-Alloy Production<br>Subcategory 4.10: Foundries<br>Subcategory 4.11: Agglomeration Operations<br>Subcategory 4.12: Pre-Reduction and Direct Reduction<br>Subcategory 4.13: Lead Smelting<br>Subcategory 4.14: Production and Processing of Zinc, Nickel and Cadmium<br>Subcategory 4.15: Processing of Arsenic, Antimony, Beryllium, Chromium and Silicon<br>Subcategory 4.16: Smelting and Converting of Sulphide Ores<br>Subcategory 4.17: Precious and Base Metal Production and Refining<br>Subcategory 4.18: Vanadium Ore Processing<br>Subcategory 4.19: Production and /or Casting of Bronze, Brass and Copper<br>Subcategory 4.20: Slag Processes<br>Subcategory 4.21: Metal Recovery<br>Subcategory 4.22: Hot Dip Galvanizing<br>Subcategory 4.23: Metal Spray |
| 5. Mineral Processing, storage and handling | Subcategory 5.1: Storage and Handling of Ore and Coal<br>Subcategory 5.2: Drying<br>Subcategory 5.3: Clamp Kilns for Brick Production<br>Subcategory 5.4: Cement Production (using Conventional Fuels and Raw Materials)<br>Subcategory 5.5: Cement Production (using alternative Fuels and/or Resources)<br>Subcategory 5.6: Lime Production<br>Subcategory 5.7: Lime Production (using alternative Fuels and/or Resources)<br>Subcategory 5.8: Glass and Mineral Wool Production<br>Subcategory 5.9: Ceramic Production<br>Subcategory 5.10: Macadam Preparation<br>Subcategory 5.11: Alkali Processes  |
| 6. Organic Chemical Industry                | The production, or use in production of organic chemicals not specified elsewhere including acetylene, acetic, maleic phthalic anhydride or their acids, carbon disulphide, pyridine, formaldehyde, acetaldehyde, acrolein and its derivatives, acrylonitrile, amines and synthetic rubber.<br>The production of organo-metallic compounds, organic dyes and pigments, surface active agents.<br>The polymerisation or co-polymerisation of any unsaturated hydrocarbons, substituted hydrocarbon (including vinyl chloride).<br>The manufacture, recovery or purification of acrylic acid or any ester of acrylic acid.<br>The use of toluene di-isocyanate or other di-isocyanate of comparable volatility; or recovery of pyridine.  |
| 7. Inorganic Chemical Industry              | Subcategory 7.1: Production and or Use In Manufacturing Of Ammonia, Fluorine, Fluorine Compounds, Chlorine, and Hydrogen Cyanide<br>Subcategory 7.2: Production of Acids<br>Subcategory 7.3: Production of Chemical Fertilizer  |

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|   |  |
|---|--|
|   | <p>Subcategory 7.4: Production, Use in Production or Recovery of Antimony, Arsenic, Beryllium, Cadmium, Chromium, Cobalt, Lead, Mercury, and or Selenium, by the Application of Heat.</p> <p>Subcategory 7.5: Production of Calcium Carbide</p> <p>Subcategory 7.6: Production or Use of Phosphorus and Phosphate Salts not mentioned elsewhere</p> <p>Subcategory 7.7: Production of Caustic Soda</p> |
| 8. Thermal Treatment of Hazardous and General Waste                       | <p>Subcategory 8.1: Thermal Treatment of General and Hazardous Waste</p> <p>Subcategory 8.2: Crematoria and Veterinary Waste Incineration</p> <p>Subcategory 8.3: Burning Grounds</p> <p>Subcategory 8.4: Drum Recycling Processes</p>   |
| 9. Pulp and Paper Manufacturing Activities including By-Products Recovery | <p>Subcategory 9.1: Lime Recovery Kiln</p> <p>Subcategory 9.2: Chemical Recovery Furnaces</p> <p>Subcategory 9.3: Chemical Recovery Copeland Reactors</p> <p>Subcategory 9.4: Chlorine Dioxide Plants</p> <p>Subcategory 9.5: Wood Burning, Drying and the Production of Manufactured Wood Products</p>  |
| 10. Animal Matter Processing  | <p>Processes for the Rendering Cooking, Drying, Dehydrating, Digesting, Evaporating Or Protein, Concentrating Of Any Animal Matter Not Intended for Human Consumption</p>  |

*Procedure for the listing of activities*

In publishing a list of activities, the Minister or MEC is required to follow a consultative process as outlined in Sections 56 and 57 of the AQA. This includes consultation with all Cabinet members (members of the Executive Council in the case of the MEC), whose areas of responsibility will be affected by the listing, and public participation by allowing for a minimum 30-day comment period.

The identification and prioritisation of the activities to be added or removed from the list of activities shall be based on but not limited to factors outlined in 5.3.3. The targeting of industries where the benefits of regulation are expected to outweigh the costs, based on experience from developed and developing countries, substantially reduces the risks of economic impacts arising due to the emission standards set.

The listing of activities therefore must be informed by appropriate analysis, such as cost-benefit analysis (CBA). In targeting industry sectors for which information on emissions and impacts is less available or inconclusive, particularly those comprising small and/or older operations, provision for CBA studies will be made so as to extend the list of activities and associated set of national minimum emission standards in a manner which does not lead to unjustified economic impacts or mass non-compliance.

In summary, the procedure for listing of activities is depicted in the flowchart in Error! Reference source not found.. The identification of all potential Listed Activities will be based on assessment of local industries based on but not limited to factors outlined in 5.3.3 (Step 1 in Figure 9: Procedure for the identification of listed activitiesError! Reference source not found.). A prioritisation process based on those known to be significant emitters will be undertaken to arrive at an revised list of Listed Activities. Prioritisation will be informed by appropriate analysis (e.g. CBA) which would include potential detrimental effects to human health (Step 2). Thereafter, there is an appropriate comment period for a minimum 30-day period (Step 3) and the publication of the final list of Listed Activities (Step 4). There is provision for a regular review of the Listed Activities every five years (Step 5), but this does not preclude the ability of the Minister or MEC to amend the list either by adding further activities (Step 6) or removing activities (Step 7) from the list at shorter time intervals.

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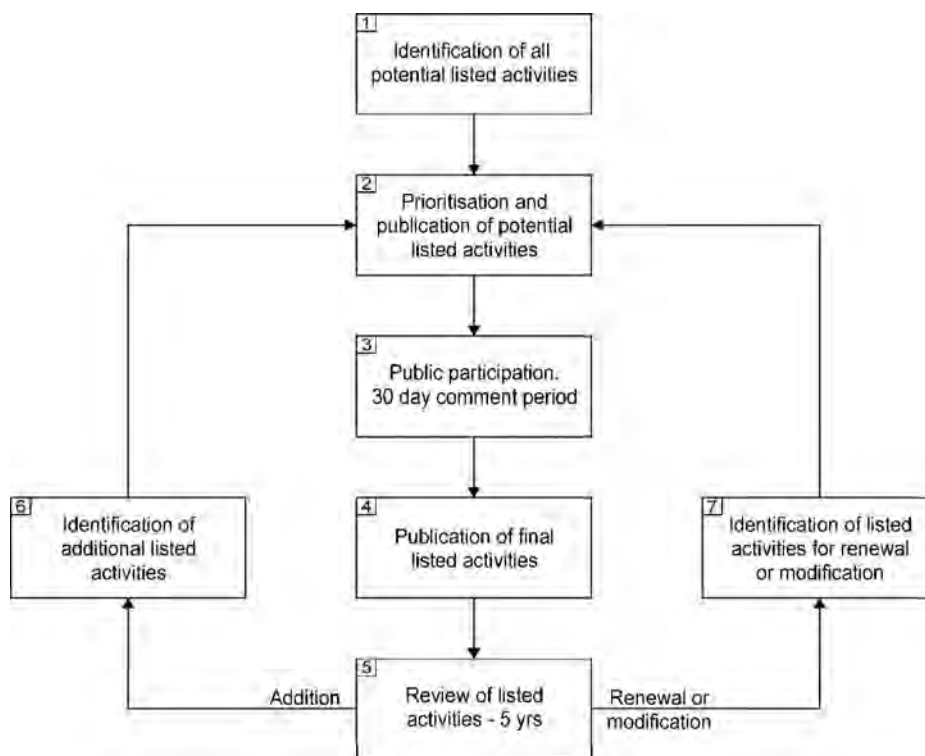


Figure 9: Procedure for the identification of listed activities

## 5.4.3.4 Standard-setting process for listed activities

The approach for establishing emissions standards for Listed Activities will follow the generic approach outlined in Paragraph 5.4.3.1 of this document. As the result of the variety of emission standards that might be established, and different approaches that may be adopted, the criteria followed by the department shall form part of the draft technical standard that will be used by the Expert Panel. In adopting the criteria to follow, the department shall use the following principles outlined in this section.

*The use of Best Practicable Environmental Option*

As discussed above, the process to establish national emission standards will be based on the application of the Best Practicable Environmental Option (BPEO) principle informed by the Best Available Technology/Technique (BAT) approach. Section 4(2)(b) of NEMA requires that "environmental management must be integrated, acknowledging that all elements of the environment are linked and interrelated, and it must take into account the effects of decisions on all aspects of the environment and all people in the environment by pursuing the selection of the best practicable environmental option" (BPEO). The national department has defined BPEO as the option that provides the most benefit or causes the least damage to the environment as a whole, at a cost acceptable to society in the long-term as well as in the short-term (DEAT, 2004).

The BPEO test for a decision comprises the following components:

- *Best* – meaning "state of the art", most effective or most beneficial. "best" is informed by information provided in peer-reviewed local and international literature;
- *Practicable* – meaning feasible, realistic, possible, workable, practical, viable or doable, i.e. it is the opposite of impossible. "practicability" is informed by cost-benefit analyses (CBA), accessibility, cost effectiveness, availability and other information provided in peer-reviewed local and international literature; and
- *Environmental option* – meaning that the option must be measured in terms of its impact on the environment, where the environment means the surroundings within which humans exist and that are made up of: (i) the land, water and atmosphere of the earth; (ii) micro-organisms, plant and animal life; any part or combination of (i) and

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(ii) and the interrelationships among and between them; and the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and wellbeing.

In the standard setting context, specifically with respect to technically-based standards (e.g. emission standards) the "best" component of BPEO principle will be informed through the use of the Best Available Technology/Technique (BAT) approach. BAT implies the consideration of technologies or techniques that deliver pollution controls to the best degree technologically possible, without economic or other considerations. In this regard BAT is measured with reference to best practice documentation published internationally.

In the application of BAT for the purpose of informing emissions standards and monitoring protocols for the prioritised industry types, reference must be made to the best practice documentation published internationally. Emission standards must not prescribe the use of one specific technique of technology (i.e. where possible, technology forcing must be avoided).

A lower limit can be set for activity, throughput or production rate, or uncontrolled emission rate to prevent the inclusion of a large number of small facilities, which would be more appropriately controlled under Section 23 (Controlled Emitters) of the AQA if control is deemed necessary. Emission standards must be specified primarily for point sources (stacks and vents) where emission monitoring is possible. Where the control of diffuse emissions is considered significant enough to warrant inclusion in national standards (e.g. fugitive dust at bulk ore/coal handling and processing plants and certain metallurgical industries; evaporative emissions from bulk chemical storage and handling), emission limits expressed in the form of specific best practice control measures which are applicable across individual industries must be stipulated (e.g. floating roof tanks), or alternatively, a comprehensive fugitive emission management plan must be put in place.

Only those pollutants recognised to pose a potential threat to health and/or the environment must be selected for the setting of emission standards for each industry type selected (with the exception of incineration for which an extended number of substances must be regulated in line with current local and international experience). Reference must be made to international information and approaches in the selection of the most suitable substances to target. Where appropriate, use will be made of surrogate parameters to reduce compliance monitoring costs. In the procedure which is described below, there is a mechanism for reviewing this recommendation.

#### *Format for expressing emission standards*

The AQA stipulates that emission standards must include the permissible amount, volume, emission rate or concentration of that substance or mixture of substances that may be emitted and the manner in which measurements must be carried out. This requirement in the AQA came about as a result of the manner in which emission standards have been historically specified within the APPA Registration Certificates (i.e. typically as emission concentrations without limits on volumetric flows or on total masses of emissions). The specification of a total mass as a permissible amount or a volume in a general national minimum emission standard intended to regulate a number of individual industries is problematic, unless it is specified on a per unit production or output basis i.e. a performance standard.

Emission standards must be expressed either as an emission concentration or a performance standard (i.e. amount of pollutant emitted per unit of activity) or, where appropriate, a combination of both, with the actual concentration or level of performance taken from BAT. Total masses of emissions permissible can be included in the AELs of Listed Activities.

#### *Measurement of emissions*

The AQA stipulates that the manner in which the measurement of emissions from Listed Activities is undertaken must be specified. For purposes of compliance monitoring, it is necessary to carry out measurement of emissions.

The emission monitoring required clearly depends on the nature of the source, the pollutant and the emission standard. Emission standards expressed as emission concentrations require direct stack monitoring. The sector-specific monitoring method and frequency will be taken from internationally available best practice documentation. In most cases, continuous emissions monitoring will be prescribed for the larger sources of criteria pollutants as is typically best practice, with periodic (e.g. annual) testing campaigns stipulated for metals, persistent organic compounds etc. Continuous stack monitoring will be required in areas that are not in compliance with ambient air quality standards, especially within declared priority areas where the emissions from the stack significantly contribute to poor air quality in the area. Emission standards expressed as a performance standard (e.g. kg of pollutant per ton product) requires a combination of direct monitoring and product tonnage tracking methods.



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*Compliance time frames*

Compliance time frames have been informed by industry cycles. Based on international experience, an effective approach would be to set minimum time frames for compliance nationally (taking account of industry cycles), with provision being made for more restricted compliance time frames to be specified by provinces or municipalities for industries within their jurisdictions and/or stricter timetables being negotiated for inclusion in permits. Compliance time frames, in line with international trends are typically:

- 2 to 3 years in the case of new or substantially modified facilities;
- 5 to 10 years in the case of existing facilities, potentially differentiated by age.

*Phase-in and transitional arrangements*

As outlined above, the initial list of activities comprises industry types which are known to be potentially significant in terms of their atmospheric emissions, and where based on experience from developed and developing countries, economic risks are likely to be minimal. Additional measures to reduce risk during this initial phase include: (i) restricting pollutants for which emission standards are specified to the key ones for that industry type, thus reducing compliance monitoring and reporting costs; (ii) taking industry cycles into account in the setting of national minimum compliance timeframes, and (iii) making provision for industries to apply for extensions based on impact assessments being undertaken.

Allowance is made for emission standards to be varied to take account of the age of facilities. The setting (retention) of less stringent emission standards for older facilities has a place in the regulatory process internationally. It is however notable that these emission standards are not static, but that there are time frames within which facilities are expected to meet firmer standards. Generally, the approach adopted is to link required improvements to major plant modifications and to take advantage of industry cycles.

A further transitional arrangement practised internationally is the specification of general emission standards for application to industries for which sector-specific emission standards are not yet applicable. Taking into account the recommendation that a select list of industry types be prioritised for the setting of specific emission standards, general emission standards for application to industries which are initially not listed are to be used.

*Compliance tolerances*

Compliance tolerances will be dealt with as part of the standard setting process.

*Postponement/suspension of compliance timeframes*

Given the potential economic implications of emission standards, and mindful that emission standard setting in South Africa was not based on comprehensive sector-based CBA (at least not for the initial group of Listed Activities), provision is made for specific industries to apply for possible extensions to compliance time frames for new plant standards. A proponent of a Listed Activity will be allowed to apply for a postponement or suspension of the compliance date and such an application will be considered based on the following conditions being met:

- An application is accompanied by a completed Atmospheric Impact Report (as contemplated in Section 30 of the AQA); and demonstration that the industry's air emissions are not causing direct adverse impacts on the surrounding environment;
- The application is accompanied by a concluded public participation process undertaken as specified in the NEMA Environmental Impact Assessment Regulations;
- The application is submitted to the National Department on or before 31 March 2019;
- Ambient air quality in the area is in compliance with the applicable National Ambient Air Quality Standards; and
- Other requirements as may be specified by the National Air Quality Officer.

It should be noted that the year 2020 marks 10 years since the publication of the 2010 AQA Section 21 notice (Listed activities and minimum emission standards). Therefore, sufficient time has been afforded to industry towards compliance with the initial MES by 2020. In upholding the objectives of the AQA, the Department provides certainty regarding postponement or suspension of compliance timeframes in the following order:

- Existing facilities may apply for a once-off postponement of compliance timeframes for new plant standards. A postponement if granted will be for a period not exceeding 5 years and no postponement would be valid beyond 31 March 2025;

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- Existing facilities that will be decommissioned by 2030 may apply for a once-off suspension of compliance timeframes with new plant standards for a period not beyond 2030. An application must be accompanied by a clear decommissioning schedule and no such application shall be considered after 31 March 2019;
- Existing facilities that will be granted a suspension of compliance timeframes shall comply with existing plant standards during the suspension period until they are decommissioned; and
- No postponement of compliance timeframes or a suspension of compliance timeframes shall be granted for existing plant standards.

#### 5.4.3.5 *Controlled Emitters*

##### *Introduction*

According to Section 23 of the AQA, the Minister or MEC may declare any appliance or activity, or any appliance or activity falling within a specified category, as a controlled emitter if it results in atmospheric emissions which present a threat to health or the environment or which the Minister or MEC reasonably believes presents such a threat. The controlled emitter regulatory tool is principally for the management of emissions from widespread, small-scale emitters.

The following controlled emitters have been identified and the status of declaration is presented in Table 18:

- Small boilers
- Temporary asphalt plants
- Small scale char and charcoal plants

Other examples of potential emitters include, but not limited to, the following:

- Fuel transfer facilities

##### *Identification of controlled emitters*

The procedure for identification and declaration of controlled emitters will be based on a prioritisation process taking account of the following factors:

- Severity of impacts on health and well-being;
- Activity likely to yield the most incremental improvement in ambient air quality;
- International experience;
- Availability of technology.

In declaring an appliance or activity as a controlled emitter, the Minister or MEC is required to:

- follow a consultative process in accordance with sections 56 and 57 of the AQA;
- to apply the precautionary principle contained in the NEMA;
- to take account of international obligations;
- to consider any sound scientific information; and
- to consider any risk assessments.

Activities/appliances likely to be declared potential controlled emitters within the next five years will be prioritised following a similar procedure outlined in Paragraph 5.4.3 of this document.

##### *Standard-setting process for controlled emitters*

Once an appliance or activity is declared a controlled emitter, emission standards must be set. The standards must set the permissible amount, volume, emission rate or concentration of any specified substance or mixture of substances that may be emitted from the controlled emitter. The manner in which the measurements of emissions from controlled emitters must be carried out must also be prescribed. International best practice, with the consideration of local circumstances, must be used to inform the principles upon which standards are based and the standard setting process.

##### *Implementation of the controlled emitters*

Section 25 of AQA prohibits the manufacturing and sale of any appliance; and operation of any activity declared a controlled emitter, unless such appliance or activity complies with emission standards.

Where the Minister or MEC has identified an appliance as a significant emission source, and requires that emission standards be applicable at the level of manufacturing and/ or sale, the Minister or MEC will collaborate with the Minister of Trade and Industry to ensure that such standards are established and implemented at the level of manufacturing by the relevant statutory bodies under the National Technical Infrastructure. This collaboration involves establishment of the standards or technical specifications by South African Bureau of Standards (the SABS), and adoption and enforcement of

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such standards as compulsory specifications by the National Regulator for Compulsory Specifications (NRCS). The process tabled below will be followed for such standards.

| Steps | Process  | Empowering Provisions   | Output   | Responsibility |
|-------|--|-------------------------|--|----------------|
| 1     | Identification of an appliance that needs to be declared as a controlled emitter.  | S.23 AOA                | Background Information Document                          | Minister/ MEC  |
| 2     | Submission of the new project request to the SABS with full justification on the need for the development of the standard. | SANS 1 -1 Standards Act | New project under the SABS                               | Minister/ MEC  |
| 4     | Development of the National Standard   | SANS 1 -1 Standards Act | South African National Standard/ Technical Specification | SABS           |
| 5     | Submission of a request for development of a Technical Regulation/ Declaration of SANS as a compulsory specification       | NRCS Act                | Formal Request and Background Information Document       | Minister/ MEC  |
| 6     | Development of a Technical Regulation/ Declaration of SANS as a compulsory specification                                   | NRCS Act                | Technical Regulation/ Compulsory Specification           | NRCS/ the DTI  |
| 7     | Compliance monitoring and inspection of the Compulsory Specification   | NRCS Act                | Compliance with the Compulsory Specification             | NRCS           |
| 8     | Maintenance of the compulsory specification  | NRCS Act                |  | NRCS           |

Where the Minister or MEC has declared an activity as a controlled emitter, and established the emission standards for such activity at operation level, the implementation of such standards lies with local authorities. The following process shall be followed to manage controlled emitter activities in municipal jurisdictions.

| Steps | Process  | Empowering Provisions | Output   | Responsibility      |
|-------|--|-----------------------|--|---------------------|
| 1     | Submission of a notification to use an appliance or conduct an activity declared a controlled emitter in the municipal jurisdiction, using prescribed registration form.   | S.23 Notice           | Notice to declare an appliance as a controlled emitter.            | Controlled emitter. |
| 2     | Consideration of the notification letter/registration form and issuance of a registration letter/certificate: <ul style="list-style-type: none"> <li>Once the air quality officer is satisfied that the appliance or activity meets the controlled emitter description and that the requirements of the Notice will be met.</li> </ul> | None                  | A registration letter/certificate to conduct a controlled emitter. | Municipality        |
| 3     | Add the activity in the database of the controlled emitters  | None                  | A database of controlled emitters.                                 | Municipality        |

**CONTINUES ON PAGE 130 - PART 2**



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|   |   |      |  |                    |
|---|---|------|--|--------------------|
| 4 | Submission of emissions report to the air quality officer/ municipal compliance and enforcement section | S.23 | Emissions Compliance report            | Controlled emitter |
| 5 | Continuous compliance monitoring and enforcement  | S.23 | Compliance with the emission standards | Municipality       |

*Compliance time frames*

Compliance time frames will be established for each of the controlled emitters taking account risks to human health, relative contribution to ambient air quality levels, and ability to monitor for compliance.

*Compliance tolerances*

Compliance tolerances will be determined as part of the standards setting process.

*5.4.3.6 Controlled Fuels**Introduction*

Section 26 of AQA provides for the Minister or MEC to declare a substance or mixture of substances as a controlled fuel, if when it is used as a fuel in a combustion process, it results in emissions to the atmosphere which the Minister or MEC reasonably believes present a threat to health or the environment. Controlled fuels may be defined as those substances or mixtures of substances that have caloric value but are not controlled by the Department of Energy and are sometimes referred to as alternative fuels.

Examples of potential controlled fuels include:

- Waste organic chemicals;
- Tyres; and
- Spent pot linings.

*Procedure for identification of controlled fuels*

Identification of controlled fuels is likely to be influenced by other legislation, especially the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) as most of these are classified as wastes or by-products. As these pieces of legislation promote the re-use of substances or mixture of substances that have specified calorific values, the controlled fuel tool shall be used to ensure that this reuse is conducted in a manner that does not impact negatively on ambient air quality. Currently, the National Policy on Thermal Treatment of General and Hazardous Waste provides the framework in which thermal waste treatment technologies shall be implemented in the country with respect to the following:

- Incineration of general and hazardous waste in dedicated incinerators or other high temperature thermal treatment technologies, including but not limited to pyrolysis and gasification; and
- The co-processing of selected general and hazardous waste as alternative fuels and/or raw materials (AFR) in cement production.

In relation to this policy framework, thermal treatment and the use of AFRs are listed in terms of Section 21 of the AQA, and associated minimum emission standards are specified. The Minister has published the national norms and standards for the assessment of waste for landfill disposal, which restricts the land filling of waste with specific calorific value. These norms and standards are aimed at promoting the reuse of this waste is further supported by the AQA with respect to combustion of waste in a manner that does not impact negatively on ambient air quality.

As further policy framework is developed for the use of alternative fuels and raw materials, controlled fuel tool will, where appropriate, be used to regulate the manufacture, use and/or prohibition of such fuels. Where requirements are made in other legislation (e.g. AFR requirements in the thermal treatment policy), such requirements shall be adopted and/or implemented using other air quality tools (e.g. listed activities).

*Standard-setting process for controlled fuels*

The generic procedure described in Paragraph 5.4.3 above on standard setting will be utilised for setting standards for controlled fuels.

*Compliance time frames*

Timeframes for compliance for controlled fuels will be dealt with as part of the standards setting process.

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5.4.3.7 *Noise and odour*

Section 34 of the AQA makes provision for the Minister to prescribe national standards for the control of noise in general or by specified machinery or activities or in specified places or areas. In so doing, as well as defining noise and determining maximum levels of noise.

Notwithstanding the above, the impact of noise and odour are usually localised and, hence, are best managed at the provincial and local level through regulations and by-laws. In order to promote a uniform approach to noise and odour management, the national department has dealt with these issues in its model air pollution control by-laws (see 5.8.2.3, page 86).

Section 35 of the AQA makes provision for the Minister or the MEC to prescribe measures for the control of offensive odours emanating from specified activities. It is the responsibility of the occupier of any premises to take all reasonable steps to prevent the emission of any offensive odour caused by any activity on their premises.

The DEA has developed a best practice guidance document for odour management from the three main industrial sectors regulated in terms of Category 10 (Animal Matter Processing) of the listed activities and associated minimum emission standards. The sectors covered include fishmeal plants, tanneries and rendering plants. While the document is limited to these sectors, the principles and techniques described in the document are broadly applicable to other sectors which generate noxious or offensive odours.

5.4.3.8 *Dust*

Section 32 of the AQA makes provision for the Minister or the MEC to prescribe measures for the control of dust in specific places or areas, or by specified machinery or in specific instances. While dust generally does not pose a health risk, it may be regarded as a nuisance. It is the responsibility of the owner of the dust generating activity to take reasonable measures to limit the nuisance factor.

With respect to this, the Minister has published in the gazette the National Dust Control Regulations for the control of dust in all areas (Government Gazette No.36974, Notice No.827 of 01 November 2013). These regulations provide requirements for measures for the control of dust in all areas, which includes the requirements for monitoring, dust management plan development and implementation and reporting.

5.4.4 *Regulations*

Table 18 below lists the regulations that have been promulgated to-date and those that are intended to be promulgated under AQA.

Table 18: Schedule of Government notices and regulations in terms of the AQA

| Ref.                      | Description  | Current status  |
|---------------------------|--|---|
| AQA Section 64(2)         | Commencement notice of certain sections of the AQA (excluding sections 21, 22, 36 to 49, 51(1), 51(1)(f), 51(3), 60 and 61)  | Published on 09 September 2005 (Notice 898, Government Gazette No.28016)  |
| AQA Section 18(1)         | Vaal Triangle Air-Shed Priority Area Declaration   | Declared on 21 April 2006 (Notice 365, Government Gazette No.28732).  |
| AQA Section 7(1)          | 2007 National Framework for air quality management in the Republic of South Africa   | National framework final publication was done on 11 September 2007 (Government Gazette No.30284). Repealed by the 2012 National Framework |
| AQA Section 7(1)          | 2012 National Framework for air quality management in the Republic of South Africa   | 2012 National framework final publication was done on 29 November 2013 (Notice Number 919, Government Gazette No.37078)                   |
| AQA Section 9(1)(a) & (b) | Notice identifying substances in ambient air and establishing national standards for the permissible amount or concentration of each substance in ambient air – the 1 <sup>st</sup> ambient air quality standards. | Published on 09 June 2006(Notice 528, Government Gazette No.28899)  |
| AQA Section 18(1)         | Notice declaring the 2 <sup>nd</sup> National Priority Area (Highveld Priority Area).  | Declared as the National Priority Area on 23 November 2007 (Notice 1123, Government Gazette No. 30518).                                   |
| AQA Section 19(5)         | Notice publishing the Vaal Triangle Air-shed Priority Area Air Quality Management Plan   | The VTAPA AQMP final publication was on 28 May 2009(Notice 613, Government Gazette No.32263)  |

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| Ref.   | Description  | Current status   |
|--|--|--|
| AOA Section 20   | Regulations for implementing and enforcing the Vaal Triangle Air-shed Priority Area Air Quality Management Plan.   | Promulgated on 29 May 2009 (Notice 614, Government Gazette No.32254)   |
| AOA Section 21(1) & (3)                                | List of activities which result in atmospheric emissions and establishing minimum emission standards for each listed activity.                               | The final publication was done on 31 March 2010 (Notice 248, Government Gazette No. 33064). Repealed by notice 893 of 2013 |
| AOA Section 21   | List of activities which result in atmospheric emissions and establishing minimum emission standards for each listed activity.                               | Published on 22 November 2013 (Notice 893, Government Gazette No. 37054)   |
| AOA Section 21(1)(b)                                   | Amendments to the list Activities and Associated Minimum Emission Standards identified in terms of Section 21 Of the National Environmental Management: AQA  | Published on 12 June 2015 Notice Number 551 Government Gazette 38863   |
| AOA Section 53(p)                                      | Regulations on model air pollution control by-laws to be adopted by municipalities.  | Promulgated on 02 July 2010(Notice 579, Government Gazette No.33342).  |
| AOA Section 9(1)                                       | National ambient air quality standards   | Final publication was done on 24 December 2009(Notice 1210, Government Gazette No.32816)                                   |
| AOA Section 64   | Minister's notice bringing the remainder of the AQA into operation, namely, sections 21, 22, chapter 5, 51(1)(e), 51(1)(f), 51(3), 60 and 61 (APPA repealed) | Notice published on 26 March 2010(Notice 220, Government Gazette No.33041)   |
| AOA Section 32   | Draft National Dust control regulations  | Published on 1 November 2013 (Notice 827, Government Gazette 36974)  |
| AOA Section 9(1)                                       | National Ambient air quality standard for particulate matter of aerodynamic diameter less than 2.5 micron metres   | Notice published on 29 June 2012 (Notice 486, Government Gazette No.35463)   |
| AOA Section 18(1)                                      | Declaration of Waterberg Priority Area incorporating Bojanala platinum district  | Declared as a National Priority Area on 08 March 2013 (Notice 154, Government Gazette No.36207)                            |
| AOA Section 19(5)(a)                                   | Highveld Priority Area AQMP  | Final AQMP was published on 02 March 2012(Notice 144, Government Gazette No.35072)   |
| AOA Section 53(aA), (o) and (p) read with section 12   | National Greenhouse Gas emission reporting Regulations   | Promulgated on 3 April 2017 (notice Number 622, Government Gazette No.40762)   |
| AOA Section 29(1) read with section 29(4)              | Declaration of GHGs as Priority Air Pollutants   | Promulgated on 21 July 2017(Notice Number 710, Government Gazette No.40996)  |
| AOA Section 53(a), (o) and (p) read with section 29(3) | National Pollution Prevention Plans Regulations  | Promulgated on 21 July 2017(Notice Number 712, Government Gazette No.40996)  |
| AOA Section 53(o) read with section 30                 | Regulations prescribing the Format of atmospheric impact report.   | Published on 02 April 2015 (Notice Number 284, Government Gazette No.38633)  |
| AOA Section 23   | Declaration of Small boilers as controlled emitters  | Published on 01 November 2013 (Notice Number 831, Government Gazette No.36973)   |
| AOA Section 23(1) and section 24                       | Declaration of temporary asphalt plants as controlled emitters   | Published on 28 March 2014 (Notice Number 201, Government Gazette No.37461)  |
| AOA Section 53(a)                                      | Regulations Regarding Air Dispersion Modelling   | Promulgated on 11 July 2014 (Notice Number: 533, Government Gazette No. 37804)   |
| AOA Section 12   | National Atmospheric Emission Reporting Regulations  | Promulgated on 02 April 2015 (Notice Number: 283 Government Gazette No. 38633)   |
| AOA Section 23   | Declaration of small-scale char and small-scale charcoal plants as controlled emitters and establishment of emission standards                               | Promulgated on 18 September 2015 (Notice Number: 602 Government Gazette No. 39220)   |



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| Ref.                           | Description  | Current status   |
|--------------------------------|--|--|
| AQA Section 19                 | Waterberg-Bojanala Priority Area AQMP  | Promulgated 09 December 2015<br>(Notice Number: 1207 Government Gazette No. 39489) |
| AQA Sections 37, 44, 45 and 47 | Regulations prescribing the atmospheric emission licence Processing fee  | Promulgated on 11 March 2016<br>(Notice Number: 250 Government Gazette No. 39805)  |
| AQA Section 53(la)             | Regulations for the procedure and criteria to be followed in the determination of an administrative fine in terms of section 22A | Gazetted on 18 March 2016 (Notice Number: 332 Government Gazette No. 39833)        |
| NEMA 24(J)a)                   | Air quality offsets guidelines   | Published on 18 March 2016 (Notice 333, <i>Government Gazette</i> No. 39833)       |

#### 5.4.5 Economic instruments

The National Treasury developed a draft policy paper to outline the role that market-based instruments, specifically environmentally-related taxes and charges, could play in supporting sustainable development in South Africa, and to outline a framework for considering their potential application (National Treasury, 2006). The draft policy paper focuses on the options for environmental fiscal reform and the policies and measures capable of contributing to both revenue requirements and environmental objectives.

Options include:

- Levies;
- Reforms to existing environmentally-related taxes;
- Development of new environmentally-related taxes;
- Reforming non-environmentally-related taxes with environmental incentives; and
- Fiscal incentives to improve environmental outcomes.

With regard to air quality related taxes and charges, the National Treasury has introduced CO<sub>2</sub> emissions tax on new passenger motor vehicles. The main objective of this tax is to influence the composition of South Africa's vehicle fleet to become more energy efficient and environmentally friendly. New passenger cars will be taxed based on their certified CO<sub>2</sub> emissions at R75 per g/km for each g/km above 120 g/km. The emissions tax currently apply to passenger cars, but will be extended to commercial vehicles once agreed CO<sub>2</sub> standards for these vehicles are set.

#### 5.4.6 Air Quality Management Plans

Section 15 of AQA stipulates that each national department or province responsible for preparing an environmental implementation plan or environmental management plan must include in that plan an air quality management plan. Furthermore, each municipality must include an air quality management plan in its integrated development plan (IDP) (Municipal Systems Act: Chapter 5). The DEA has developed and published a manual for AQMP development in South Africa in order to provide guidance to all spheres of government on the processes involved in developing an AQMP. The first manual was published in 2008 and was reviewed and re-published in 2012. The aim of the manual is to improve and harmonise the quality of AQMPs produced by the various spheres of government. Further to authorities' AQMPs, the Act states that a person conducting a listed activity (see Paragraph 5.3.3) which involves the emission of a substance declared as a priority air pollutant may be required to develop, submit and implement a pollution prevention plan (Section 29 of the AQA). This latter plan may also be regarded as a form of air quality management planning.

All air quality management plans (AQMPs) are logical descriptions of interventions and required resources aimed at implementing a strategy or strategies to achieve a specific air quality objective(s).

The nature of the involvement and the degree or depth of management required in each of the generic activities will vary for different government departments and for different planning and implementation spheres in government. Furthermore, the intensity of air quality management planning, implementation and control will differ depending on the class of air quality experienced in the area.

The successful development and implementation of an AQMP is also dependant on multi-stakeholder involvement throughout the process. Thus the identification and establishment of stakeholder groups must be done in the beginning of AQMP development.

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5.4.6.1 The AQMP development process

Notwithstanding the class of air quality experienced in a given area, all air quality management planning follows a systematic process illustrated in Figure 10. The process of AQMP development starts with the establishment of stakeholder groups, defining of the boundaries of the AQMP geographic area and the establishment of a baseline. Baseline assessment involves gathering of both geographic and air quality information which is critically important in informing the AQMP. Geographic information include population and statistics, topography, land-use, climatology and other geo information that has implication for air quality. Air quality information should include the type and location of the various sources of air quality, emissions inventories an ambient air quality status as determined through air quality monitoring and dispersion modelling. Any dispersion modelling exercise for AQMP development should be done in accordance with the Regulations on Air Dispersion Modelling (Notice Number: 533, Government Gazette No. 37804).

The next step in AQMP development is Gap Analysis. Whether data exists or not, an assessment needs to be made on the adequacy of the data; with recommendations of how such data can be improved or how data can be acquired (in case it does not exist).

Based on the baseline information the goal of the AQMP is established. Where air quality standards are not met, the general goal will be to ensure compliance with standards. Where there is compliance, the goal will be to maintain good air quality or to further improve air quality.

Step 4 is especially required where AQMP goals are not met. The step involves the development of interventions to achieve specific air quality/ AQMP objectives.

Implementation of interventions stipulated in the AQMP should be monitored and reported on. Since no air quality conditions remain the same over time, it is important that the AQMP revised from time to time to cater for the changing air quality issues.

The Air Quality Management Planning Manual for has been developed by DEA to elaborate on this process. The manual is available in the SAAQIS website.

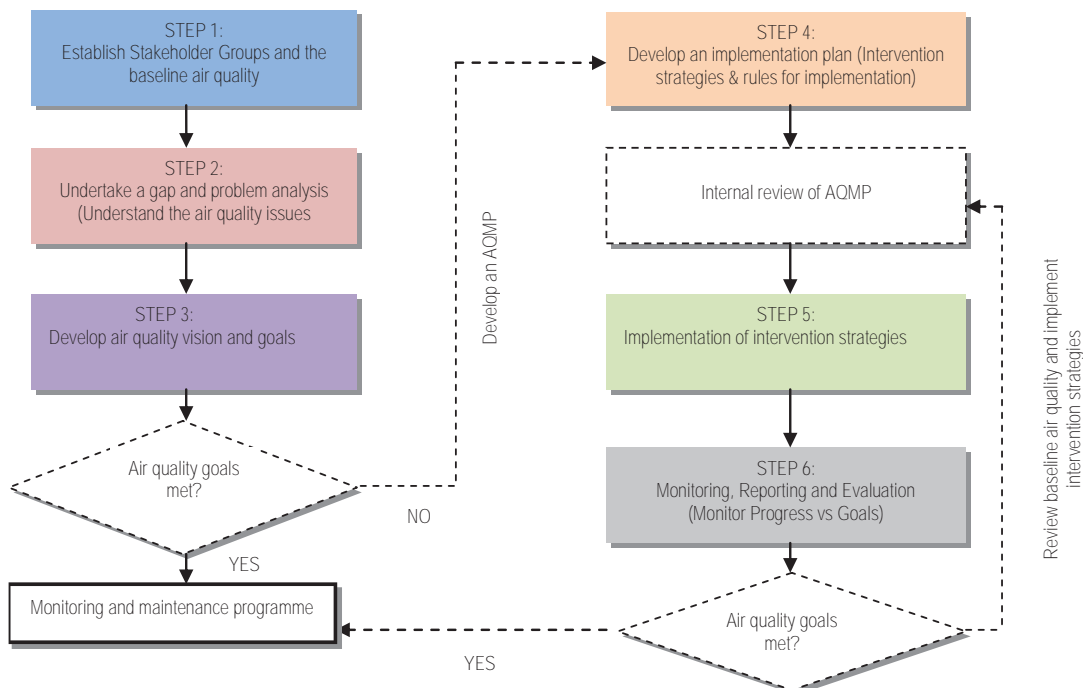


Figure 10: The generic air quality management planning process

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*5.4.6.2 The national air quality management planning support programme*

The national department has developed an AQMP Support Programme to ensure that the DEA provide effective and efficient support to AQMP development country wide thereby fulfilling the requirements of Section 15 of the AQA. The support program identified areas that require priority in terms of AQMP support. These are areas that have poor air quality, have demonstrated the need for support and there are resources available in a short to medium term to support them.

*5.4.6.3 The National Air Quality Management Plan*

As the National Framework includes a logical description of the national department's interventions and required resources aimed at implementing a strategy or strategies to achieve the objectives of the AQA, the National Framework serves as the DEAs' Air Quality Management Plan as contemplated in section 15(1) of the AQA.

*5.4.6.4 AQMPs for other National Government Departments*

Each national department that is responsible for preparing an environmental implementation plan or environmental management plan must include in that plan an air quality management plan (NEMA: Chapter 3). The main air quality management goal for national government departments is: to ensure that activities that fall within their jurisdiction do not compromise ambient air quality; to ensure implementation of the Republic's obligations in respect of international agreements; and to ensure that their air quality management plan is coordinated with the National AQMP, i.e. the National Framework. Not all national departments need to actively participate in the development of the national AQMP. The list below provides an indication of departments that must prepare AQMPs and make an input to the national AQMP:

- The Department of Mineral Resources (DMR) sets regulations, norms, standards and guidelines for dust control from mine spoil tailings and other mining operations.
- The Department of Energy (DoE) is also involved in fuel specifications, the use of low-smoke fuels and renewable energy initiatives.
- The Department of Health (DoH) sets regulations and guidelines for all medical wastes and treatment facilities, in consultation with the national department, and regulates the medical industry within the context of environmental and health legislation.
- The Department of Agriculture, Forestry and Fisheries (DAFF) is involved in dust from agricultural activities and the use of herbicides and pesticides.
- The Department of Labour (DoL) sets regulations for air quality in workplaces.
- The Department of Water Affairs (DWA) sets regulations for forest and veld fires.
- The Department of Transport (DoT) sets regulations in respect of roads and various modes of transport.
- The Department of Defence (DoD) is involved in military exercises that have an impact on air quality.
- The Department of Rural Development and Land Reform (DRDLR) is involved in the improvement of rural livelihoods through among other things energy projects, education and awareness etc.
- The Department of Human Settlement (DHS) is involved in allocation of houses for low-income earners. Also develops energy efficient housing guidelines.
- The Department of Trade and Industry (DTI) is involved in the setting of standards for alternative energy technologies.

*Air quality information*

In order to contribute towards a coordinated approach to air quality management in South Africa, national government department must have a fundamental understanding of the air quality implications of their technology, development and economic planning. While this may not be air quality information *per se*, information on motor vehicle emission characteristics and fuel specifications, as example, have implications on air quality, as do national planning decisions on public transport alternatives.

*Control options (interventions)*

Development of interventions will require coordinated decision making and the nature of the control options will vary from department to department.

*Implementation of interventions*

Implementation of interventions may not be limited to a single department and will require coordinated governance, hence the need for horizontal integration (see Figure 2).

*Evaluate change and efficacy of intervention*

The efficacy of these interventions will be evaluated, through the National Framework review process and through evidence of improved air quality in state of the air reporting.

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*Climate change response*

In order to contribute toward a coordinated approach to climate change response in South Africa, national government departments must have a fundamental understanding of the climate change implications of their technology, development and economic planning and/or their vulnerability to climate change.

*5.4.6.5 Priority Area AQMPs*

AQMPs for declared priority areas must be developed in accordance with the manual for AQMP development in South Africa (including other related regulations, guidelines, software, standard formats, templates and best practise case studies that may be available) and should be aimed at the efficient and effective implementation of the air quality management planning and reporting regime.

*5.4.6.6 Provincial AQMPs*

Each province responsible for preparing an environmental implementation plan must include in that plan an air quality management plan (NEMA: Chapter 3).

As with the priority area AQMPs, provincial AQMPs must be developed in accordance with the Manual for AQMP Development in South Africa (including other related regulations, guidelines, software, standard formats, templates and best practise case studies that may be available) and should be aimed at the efficient and effective implementation of the air quality management planning and reporting regime.

*5.4.6.7 Municipal AQMPs*

Each municipality must include an air quality management plan in its Integrated Development Plan (Municipal Systems Act: Chapter 5).

As with the priority area AQMPs and provincial AQMPs, municipal AQMPs must be developed in accordance with the Manual for AQMP Development in South Africa (including other related regulations, guidelines, software, standard formats, templates and best practise case studies that may be available) and should be aimed at the efficient and effective implementation of the air quality management planning and reporting regime.

The status of AQMP development each year (indicating those municipalities that have developed and those that are in the process of developing AQMPs), will be published annually in the National Air Quality Officer's (NAQO) Annual report.

*5.4.6.8 Pollution Prevention Plans*

According to section 29 of the AQA, the Minister may declare any substance contributing to air pollution as a priority air pollutant, thereby requiring emitters of such pollutants to develop pollution prevention plans.

The Minister has so far declared GHGs as priority air pollutants. As such require a person conducting identified production process which involves emission of greenhouse gases in excess of 0.1 Megatonnes (Mt) annually, reported as carbon dioxide equivalents (CO<sub>2</sub>-eq), and/or if so directed by the Minister to submit a pollution prevention plan to the Minister for approval. The implementation of these plans would ensure that South Africa is able to fulfil its UNFCCC obligations, particularly its NDC.

*Air quality information*

The air quality information requirements for an emission reduction strategy must include a comprehensive site emission inventory. Detailed information is also required on concentrations of pollutants in ambient air from monitoring, and where appropriate complemented by air dispersion modelling in order to measure progress towards the specified goal.

*Control options (interventions)*

Control options available to other emitters may include, but not be limited to:

- Alternative fuels;
- Alternative technology;
- The installation of emissions abatement technology;
- Process changes; and/or
- Behavioural changes, e.g. selection of a non-polluting mode of transport.

*Implementation of interventions*

Implementation of interventions will be specific to the intervention and the targeted emission source or sources. The rules for implementation and sequence of events will have to be agreed upon among the participating government departments and experts. For point sources this will be specified in the AEL.

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*Evaluate change and efficacy of intervention*

The efficacy of the interventions needs to be evaluated through measurement specific to the intervention, e.g. emission monitoring for emissions reduction or licence interventions, or ambient monitoring for interventions that impact on residential sources. In this case the AEL must establish time frames for measurement and reporting.

*5.4.6.9 AQMP reporting requirements*

Section 17 of AQA requires that all National departments that are required to develop AQMPs, report on implementation of their AQMPs as part of the annual EIP or EMP reporting contemplated in section 16 (1)(b) of NEMA.

Each province or municipality that is required to develop an AQMP in terms of section 15 of AQA, also needs to submit a report on implementation of the AQMP. This report should be submitted as part of the Air Quality Officers' report described in Paragraph 5.2.3.2 of this document.

A report on implementation of an AQMP for emitters of priority pollutants will be provided as part of their respective AEL requirements and will be submitted to the relevant licensing authority.

*5.4.6.10 Human health impact assessments*

One of the objectives of the AQA is to give effect to section 24(b) of the constitution in order to enhance the quality of ambient air for the sake of ensuring an environment that is not harmful to health and well-being of the people. For this reason therefore, air quality management and planning should take into account the impacts of air quality on human health and the interventions developed should be aimed primarily at minimising the of air pollution on the health of the people.

*5.4.7 National Air Quality Management Strategies*

In order to manage non-industrial emission sources contributions to ambient air quality, the department is developing specific strategies aimed at reducing emissions from these non-point sources. Firstly, the department has drafted a strategy to Address Air Pollution in Dense Low-income Settlements. The strategy focuses on the establishment of a coordinating structure consisting of various departments with the aim of ensuring that efforts to reduce emissions in low-income settlements are effective and focuses on priority areas. Secondly, the department has drafted an Integrated Strategy on the Control of Vehicle Emissions This strategy focuses on interventions aimed at reducing emissions from motor vehicles at national level and with major focus on large metropolitan areas. All these strategies have been developed in collaboration with the implementing departments and entities.

It is encouraged that, provinces and municipalities develop strategies that allow for effective management of non-point sources and incorporate such into the respective AQMPs. Example, Gauteng Province (through Gauteng Department of Agriculture and Rural Development) is developing a strategy for the control of dust from mines in collaboration with the Department of Mineral Resources.

## 5.5 Impact management

*5.5.1 Environmental Impact Assessments*

The Environmental Impact Assessment (EIA) process is well established in South Africa. It aims to assess the likely Impacts of a proposed development or activity, with the intention of providing sufficient information to aid decision-making. The key legislation for the implementation of the EIA process is NEMA, together with the Environmental Impact Assessment Regulations (as amended), read with the most recent listing notice.

The requirements of the AQA interface with the EIA process in a number of ways that are addressed in the following paragraphs. First, the process of granting an AEL is related to the issuing of an Environmental Authorisation (EA) for an EIA application as discussed in Paragraph 5.5.2 of this document. The intergovernmental cooperation and coordination that is required is illustrated in Error! Reference source not found. Secondly, the AQA has introduced some fundamental changes to air quality legislation in South Africa that will shape and inform the specialist Air Quality Impact Assessment reports, which generally form part of an EIA process. These latter aspects are considered in Paragraph 5.5.3 of this document.

*5.5.2 EIA-AEL procedural relationship*

The linkage between the EIA process for a listed activity and the AQA's atmospheric emission licensing process is illustrated in the simplified flow chart in Figure 11. National Department of Environmental Affairs, Metropolitan and district municipalities are charged with implementing the atmospheric emission licensing system (Section 36 of the AQA). Exceptions include circumstances in which they have delegated this function to a provincial organ of state in terms of

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section 238 of the Constitution of the Republic of South Africa, 1996, or when a municipality applies for an AEL, in which case a provincial organ of state is designated by the MEC as the licensing authority.

The competent authority in the case of EIA applications, either province or national, is responsible for the issuing of an EA for a listed activity.

The EIA and AEL applications and decision-making processes are phased as shown in Figure 11 to take account of the information needs of each. When considering an application for an AEL, according to section 39 of the AQA, the licensing authority must take into account, amongst others, the pollution being or likely to be caused by that activity and the effect on the environment, including health, economic conditions, cultural heritage and ambient air quality.

In order for the licensing authority to properly discharge its duties, this information must be available to inform the decision. Hence, it is necessary for the EIA process and specialist Air Quality Impact Assessment to have been completed prior to the decision on an AEL application by the licensing authority. It is important that there be one information gathering phase and this is most appropriately done during the EIA process. The licensing authority and competent authority reviews must be synchronised and interaction between the relevant municipal and provincial authorities as shown in Figure 11. Ideally, they should review the information jointly. The applicant needs to ensure that all the necessary information and relevant documentation is received by both EIA and AEL authorities at the right time to allow for alignment.

An EA in the EIA process must precede and inform the AEL decision. The EIA process is required to consider all potential environmental impacts, not only impacts of atmospheric emissions. The specialist Air Quality Impact Assessment is one of a number of possible specialist studies. Conceivably, the listed activity could result in significant impacts, other than those on the atmosphere, which could result in a negative EA, thus negating the need for an AEL application.

The public participation requirements of the EIA process are also more comprehensive and may contribute meaningfully to the atmospheric emission licensing process if the two processes are aligned. The public participation process required

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for an AEL application is specified in section 38 (3) of the AQA. An applicant must bring the application to the attention of relevant organs of state, interested persons and the public. The applicant is required to publish a notice in at least two newspapers in the area where the listed activity is to be undertaken. By aligning the public participation of the two processes, it is clear that the interests of the public are served through the more comprehensive public participation requirements of the EIA process, which may include newspaper advertisements, preparation of Background Information Documents, mail drops, public meetings and on-site notices; duplication of the public participation process is avoided; and the requirement to bring the AEL application to the attention of stakeholders can be limited to two newspaper advertisements in view of the extensive public participation that was undertaken as part of the EIA process.

5.5.3 Specialist Air Quality Impact Assessment Reports

In general, all development applications involving listed activities will be required to undergo an EIA and will require a specialist Air Quality Impact Assessment study. Through its various requirements, the AQA prescribes and informs the scope and content of such specialist Air Quality Impact Assessment studies. The key elements of the AQA that are relevant to the EIA process are summarised, followed by the establishment of norms for a specialist Air Quality Impact Assessment report based on these requirements. Key requirements of the AQA are as follows:

5.5.3.1 Human health impacts

One of the objectives of the AQA is to give effect to our constitutional right to an environment that is not harmful to the health and well-being of people (section 24 of the Constitution of the Republic of South Africa). The emphasis on human health requires that the specialist Air Quality Impact Assessment for a proposed listed activity includes an assessment of potential health impacts. The level of detail required is dependent on the nature and extent of atmospheric emissions and could range from a simple comparative assessment of predicted ambient air quality levels with ambient air quality standards through to a full health risk assessment.

5.5.3.2 Ambient air quality standards

The AQA is effects-based legislation, with the result that activities that result in atmospheric emissions are to be determined with the objective of achieving health-based ambient air quality standards. Each new development proposal with potential

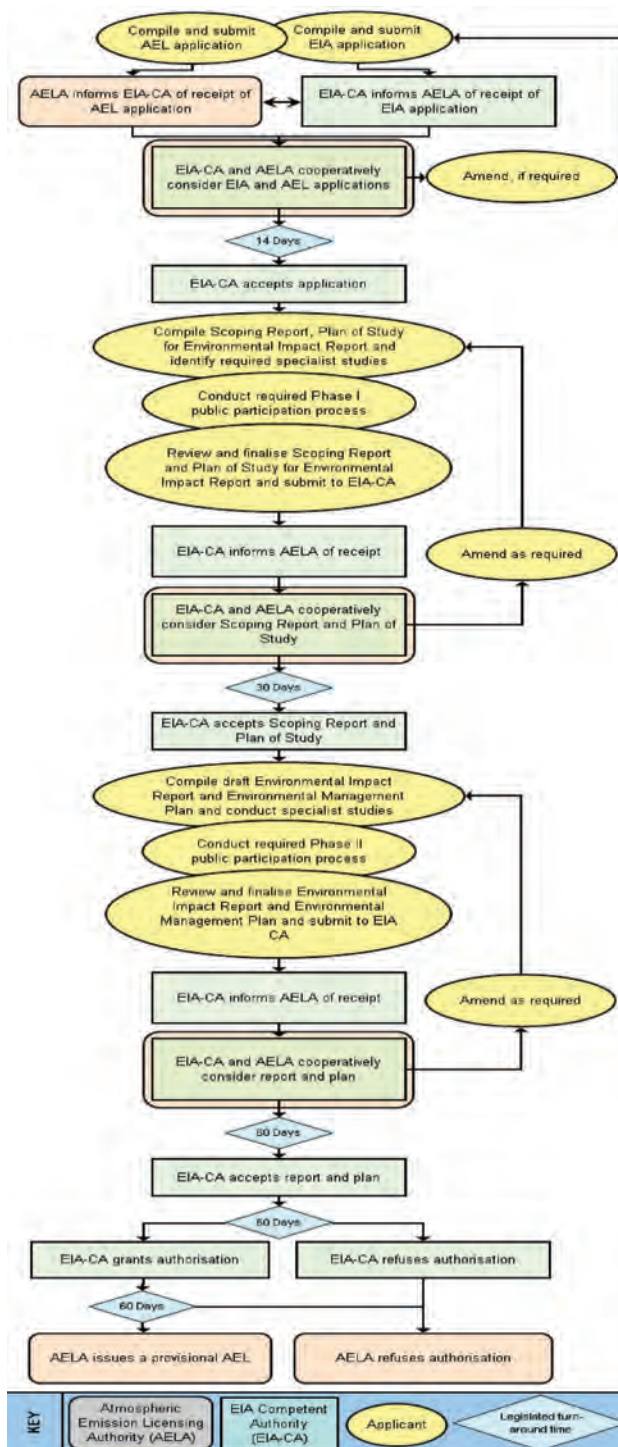


Figure 11: The interrelationship between the atmospheric emission licensing and environmental impact assessment processes

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impacts on air quality must be assessed not only in terms of its individual contribution, but in terms of its additive contribution to baseline ambient air quality i.e. cumulative effects must be considered.

#### 5.5.3.3 *Point source emission standards*

The AQA may also prescribe minimum standards for certain point source emissions and these must be taken into account in the specialist study.

#### 5.5.3.4 *Mitigation measures*

Related to the above, the AQA states that the Best Practicable Environmental Option (BPEO) that would prevent, control, abate or mitigate pollution, must be used.

#### 5.5.3.5 *Atmospheric Emission Licence (AEL) requirements*

Notwithstanding the procedural linkages between an EIA and an AEL (see Paragraph 5.5.2), the AQA prescribes factors that need to be taken into account by licensing authority when considering an application for an AEL (Section 39 of the AQA) and also stipulates the contents of AELs (Section 43 of the AQA).

Factors that need to be taken into account include, amongst others:

- the effect or likely effect of pollution on the environment, including health, social and economic conditions, cultural heritage and ambient air quality.
- the contents of an AEL or provisional AEL must include, amongst others:
- the maximum allowed amount, volume, emission rate or concentration of pollutants that may be discharged into the atmosphere under normal working conditions, and under normal start-up, maintenance and shut-down conditions;
- any other operating requirements relating to atmospheric discharges, including non-point source.

The information required by the licensing authority in the licensing process, such as atmospheric emission impacts, discharges to the atmosphere under various scenarios and fugitive emissions, is best addressed in the specialist Air Quality Impact Assessment study.

#### 5.5.3.6 *Odour, noise and dust*

The national Minister or the provincial Member of the Executive Council (MEC) may prescribe measures for the control of dust, noise and offensive odours. Further, the occupier of any premises must take all reasonable steps to prevent the emission of any offensive odour caused by an activity on the premises. Currently there is no obligation to consider odour, noise and dust impacts as part of the specialist Air Quality Impact Assessment study, but there may be circumstances where these are required, particularly if it is likely that the AEL will specify conditions in respect of odour and noise in accordance with Section 43(2) (a) of the AQA.

#### 5.5.4 *Atmospheric Impact Reports*

An AQO may require the submission of an Atmospheric Impact Report in terms of section 30 of the AQA, if:

- The AQO reasonably suspects that a person has contravened or failed to comply with the AQA or any conditions of an AEL and that detrimental effects on the environment occurred or there was a contribution to the degradation in ambient air quality. The environment is defined as including health, social, economic and ecological conditions, as well as cultural heritage;
- A review of a provisional AEL or an AEL is undertaken in terms of section 45 of the AQA.

The DEA has published the regulations with respect to the Atmospheric Impact Report in October 2013 (Notice 747, Government Gazette No. 36904). The format for an Atmospheric Impact Report includes the following aspects, among others:

- Introductory section containing, amongst other, company details, location and nature of the activity;
- Individual process details including a balance sheet of inputs, outputs and emissions;
- Detailed information on point source and fugitive emissions, and a summary of emissions under emergency and



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- upset conditions;
- Impact of the activity on ambient air quality in the area;
- Compliance history; and
- Current or planned air quality interventions.

## 5.6 Authorisations

### 5.6.1 Introduction

Authorisation is required in order to operate any listed activity anywhere in the Republic if that activity appears on the national list, or anywhere in a province where the activity may be listed. The authorisation for the operation of a listed activity is gained through the atmospheric licensing process, described in Chapter 5 of the AQA. Some relevant excerpts are provided here:

DEA as well as metropolitan and district municipalities are charged with implementing the atmospheric emission licensing system and must for this purpose perform the functions of licensing authority as set out in Chapter 5 of the AQA and other provisions of the AQA

Application for atmospheric emission licences and the procedure for licence applications are discussed in sections 37 and 38 of the AQA.

As contemplated in Sections 37(1), 44(2)(b) & 47(2) of the AQA, henceforth the SNAEL is the required form for all applications for atmospheric emission licences including review, renew and variation of AELs. The objective is to have all AELs in the SNAEL by 2020.

The factors to be taken into account by licensing authorities are detailed in section 39 of the AQA; and include, among others:

- any applicable minimum standards set for ambient air and point source emissions;
- the best practicable environmental options available that could be taken to prevent, control, abate or mitigate that pollution; and to protect the environment, including health, social conditions, economic conditions, cultural heritage and ambient air quality, from harm as a result of that pollution;

The issuing of AELs and the contents of an AEL is detailed in sections 42 and 43 of the AQA. A provisional AEL and an AEL must specify:

- the activity in respect of which it is issued;
- the premises in respect of which it is issued;
- the person to whom it is issued;
- the period for which the licence is issued;
- the name of the licensing authority;
- the periods at which the licence may be reviewed;
- the maximum allowed amount, volume, emission rate or concentration of pollutants that may be discharged in the atmosphere -under normal working conditions; and under normal start-up, maintenance and shut-down conditions;
- any other operating requirements relating to atmospheric discharges, including non-point source or fugitive emissions;
- point source emission measurement and reporting requirements;
- ambient air quality measurement and reporting requirements;
- penalties for non-compliance;
- greenhouse gas emission measurement and reporting requirements; and
- any other matters which are necessary for the protection or enforcement of air quality.

Furthermore, an AEL may:

- specify conditions in respect of odour and noise;
- require the holder of the licence to comply with all lawful requirements of an environmental management inspector carrying out his or her duties in terms of the NEMA, including a requirement that the holder of the licence must, on request, submit to the inspector a certified statement indicating:
  - the extent to which the conditions and requirements of the licence have or have not been complied with;
  - particulars of any failure to comply with any of those conditions or requirements;
  - the reasons for any failure to comply with any of those conditions or requirements; and
  - any action taken, or to be taken, to prevent any recurrence of that failure or to mitigate the effects of that failure.

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5.6.2 Procedures and timeframes in relation to various authorisations under AOA

The timeframes within which a Licencing Authority must make decision on AEL applications are specified under Section 40 of the AQA. However, these timeframes only relate to new AEL applications. There are no provisions in the AQA in relation to timeframes within which Licencing Authorities must make decisions on transfer, review, variation and renewal of AELs or Provisional AELs. In addition, the AQA does not make provisions on how AEL applications that do not have Environmental Authorisations or Waste Management Licences should be handled. The current practice is that Licencing Authorities use their discretion on the timeframe within which they make decisions on these applications. In order to bring about uniformity in this regard, the timeframes as specified in this National Air Quality Framework shall apply, which timeframes are specified hereunder.

5.6.2.1 Procedure and timeframes for new AEL with EA

The procedure for issuing an AEL that has to undergo an EIA process is outlined in section 5 and section 5.6.1. The interrelationship between the EIA and AEL application processes is summarised in Figure 11 timeframes within which a Licencing Authority must make decision on an AEL application specified under Section 40 of the AQA.

5.6.2.2 Procedure and timeframes for a new AEL without EA

All AEL applications that do not require an Environmental Authorisation in terms of NEMA shall be subjected to the following additional processes that would have been undertaken during the EIA process:

- The applicant shall undertake an Atmospheric Impact Assessment exercise and compile an Atmospheric Impact Report (AIR) in terms of Government Notice 747- regulations prescribing the format of an Atmospheric Impact Report.
- Interested and affected parties shall be engaged through a Public Participation exercise undertaken in accordance with NEMA. Comments and responses from the Interested and Affected Parties shall form part of the AIR.

The licensing authority will process the application following the process outlined in Figure 12.

**Minimum application requirements:**

- Specialist Air Quality Impact Report;
- Public Participation Report;
- Emissions Monitoring Report;
- Waste License (if applicable);
- License Processing Fee; and
- Any other addition information that may be required

**Processing timeframe: 90 days**

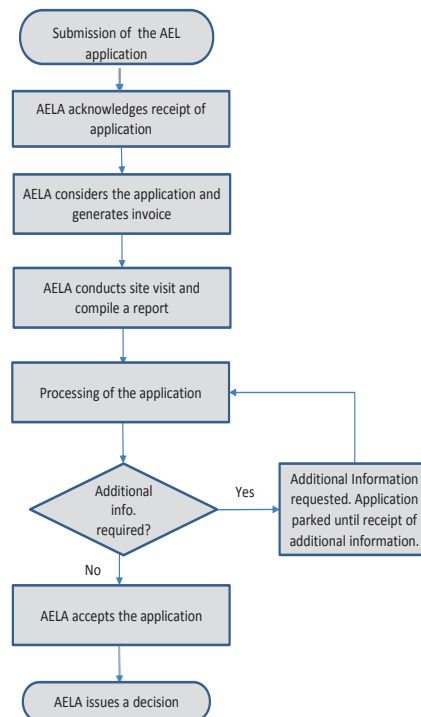


Figure 12: Process flow for AEL without EIA

The Licencing Authority shall upon receipt of a complete application for AEL without Environmental Authorisation or Waste Management Licence, made in terms of the AQA, make a decision on the application within 90 days of the receipt of a complete application.

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5.6.2.3 Procedure and timeframes for AEL renewal

Section 47 of AQA requires that the holder of an AEL or PAEL license apply for a renewal of a license upon its expiry date. This implies that:

- Each AEL and PAEL must specify the period for which the licence is valid by stating its expiry date (AQA S. 43(1)(d)); and
- The applicant has a duty to apply for the renewal of an AEL/PAEL before the expiry date stipulated in the license.

It should be noted that for PAEL, an application for renewal is permissible only once (AQA S.47 (4)).

The licensing authority will process the application following the process outlined in Figure 13.

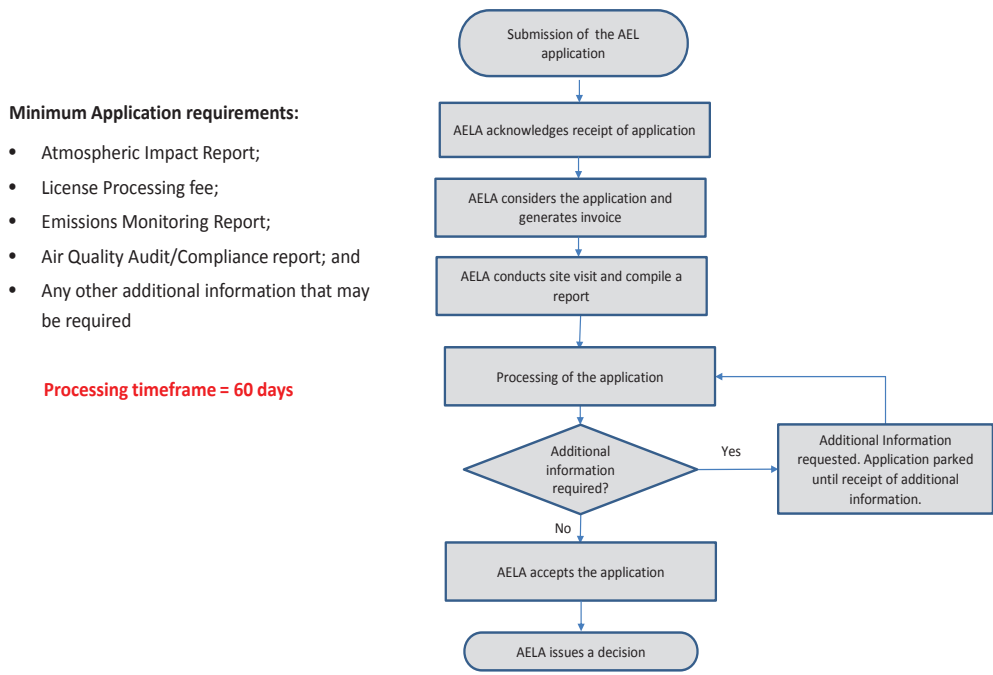


Figure 13: Process flow for AEL renewal

The Licencing Authority shall upon receipt of a complete application for renewal of an AEL/Provisional AEL make a decision on the application within 60 days of the receipt of the application.

5.6.2.4 Procedures and timeframes for AEL review

Section 45 of AQA specifies the provisions for renewal of an AEL or PAEL at intervals specified in the licence or when circumstances necessitate the review. The review of an AEL or PAEL involves assessing or monitoring the licenced facility to ensure ongoing compliance with the licence requirements or other requirements and provisions such as Directive or Compliance Notices. A renew of a license is triggered by the Licencing Authority only.

The licensing authority will process the application following the process outlined in Figure 14.

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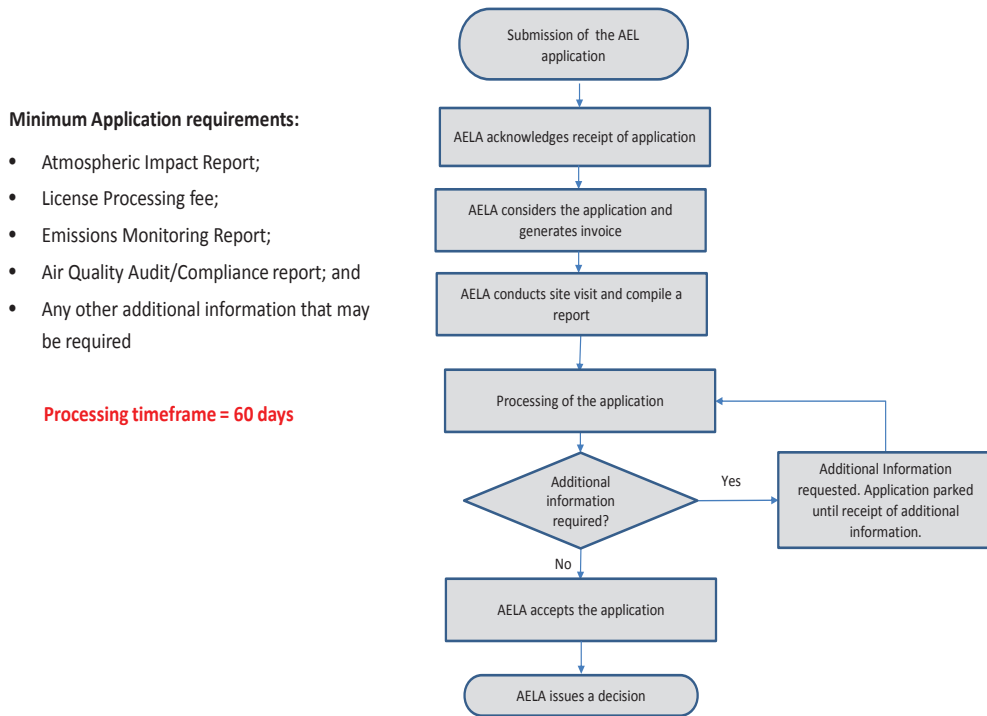


Figure 14: Process flow for AEL review

A licensing authority shall upon receipt of all required information, make a decision on the application for a review of an AEL within 60 days of receipt of complete application information.

5.6.2.5 Procedures and timeframes for AEL variation

According to section 46 (1) of AQA a licensing authority may vary the license, meaning amending the text in the license;

- If after reviewing the AEL in terms of section 45, the licensing authority deem it necessary to amend a license (AQA S46(1)(f);
- If the license is being transferred in terms of AQA section 44 (AQA S. 46(1) (e);
- At a written request by the license holder (AQA S. 46(1)(d);
- If it is necessary or desirable to accommodate demands brought about by impacts on socio-economic circumstances and it is in the public interest to meet those demands. Example, amending the license following a successful application for postponement of Minimum Emission Standards (AQA S.46(1)(c);
- If it is necessary or desirable for the purposes of achieving ambient air quality standards (AQA S.46(1)(b);
- If it is necessary or desirable to prevent deterioration of ambient air quality (AQA S.46(1)(a); or
- There is a change in legislation that requires that such changes be effected in the AEL

The licensing authority will follow the outlined in Figure 15: Process flows for AEL variationError! Reference source not found. to vary the license.

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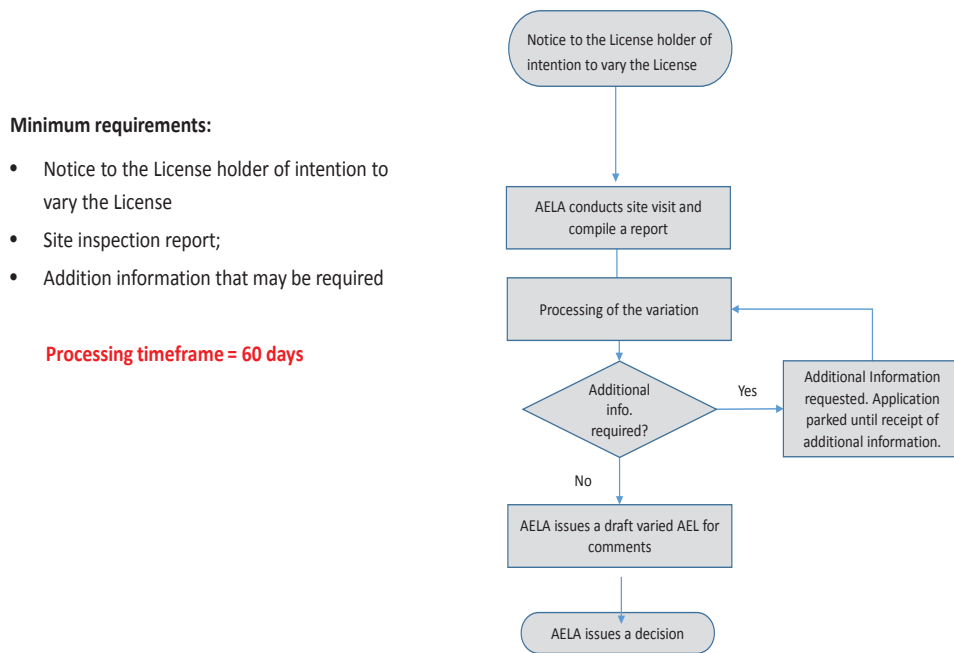


Figure 15: Process flows for AEL variation

According to AQA S. 46(1) (d), the license holder may request the licensing authority to vary the AEL. Typical circumstances where such a request can be made include among others,

- When there is a change in performance of emission control technology;
- When there is an incident that will affect the emissions over a longer period of time;
- When the applicant detect an error in the license.
- 

The licensing authority will process the application for a variation following the process outlined in Figure 16: Process flows for AEL variation (with no potential increase in emissions).

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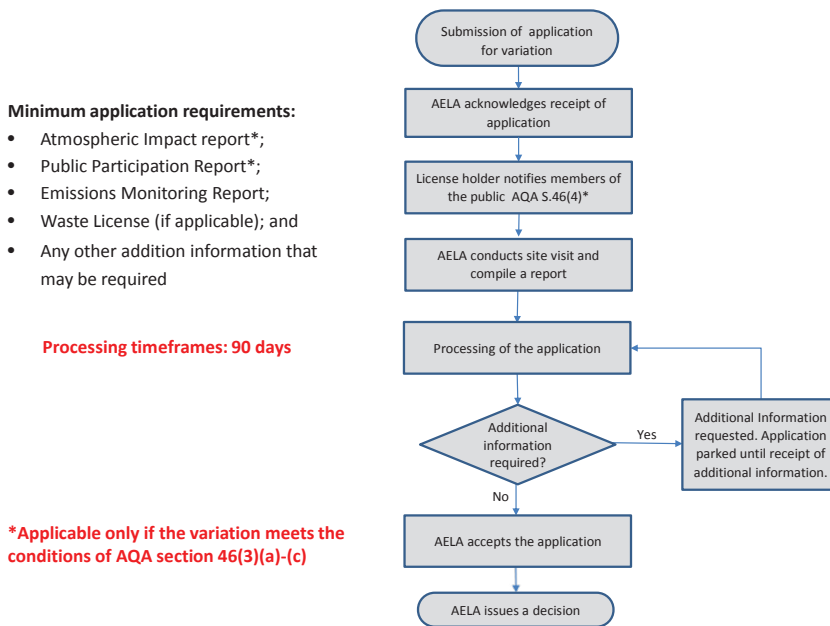


Figure 16: Process flows for AEL variation (with no potential increase in emissions)  
 Based on the above, where the application of a variation is likely to result in increased emissions and/or increased environmental impact, and the proposed variation has not been subjected to public consultation (AQA S.46 (3) (a)-(c)); the licensing authority may trigger the review of an AEL in terms of AQA section 45 before varying the AEL. In such cases, the application for variation should be accompanied by documents required for the review of an AEL (including public participation report and atmospheric impact report). The requirements for public participation for a variation of AEL are stated in AQA section 46(4).

The Licencing Authority shall upon receipt of a complete application for variation of an AEL/Provisional AEL, make a decision on the application within 60 days of the receipt of complete application information.

5.6.2.6 Procedures and timeframes for AEL transfer

In accordance with AQA section 44, a person conducting a listed activity must inform the licensing authority of any change in ownership of a listed activity and apply for a transfer of AEL and PAEL associated with such a listed activity. The licensing authority will process the application following the process outlined in Figure 17.

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**Minimum requirements**

- Administrative fine
- Specialist Air Quality Impact Report;
- Public Participation Report
- Emissions Monitoring Report (if any);
- Waste License (if applicable);
- License Processing Fee
- Any other addition information that may be required

**Processing Time Frame: 60 days from acknowledgement of receipt of proof of fine payment by the AELA**

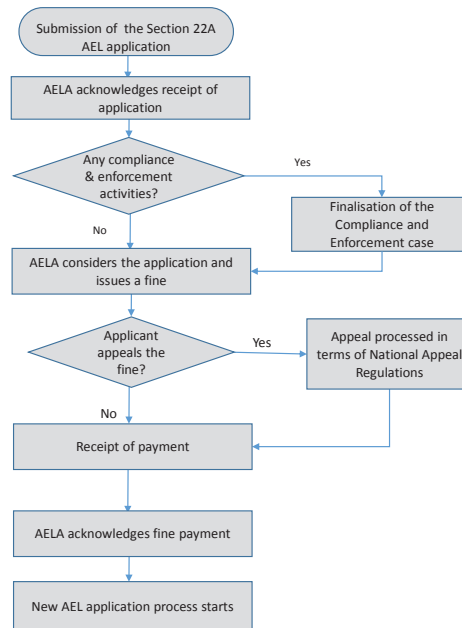


Figure 17: Process flow for AEL transfer

The Licencing Authority shall upon receipt of a complete application for transfer of an AEL/Provisional AEL make a decision on the application within 30 days of the receipt of the application.

5.6.3 Consequences of conducting a listed activity without an AEL

Conducting a listed activity without an AEL is an offence according to section 22 read with section 51 of AQA. It should be noted that a person can conduct a listed activity within a facility that has been issued with an AEL (see the definition of listed activity in AQA). Section 22A of AQA provides for a person who has been operating a listed activity without an AEL to apply for an AEL. The application must comply with all the requirements as stipulated in section 37 of AQA. The process for granting or refusing the application is preceded by the administrative fine that must be paid as a penalty for operating illegally. The procedure for determining the fine is outlined in the Regulations for the Procedure and Criteria to be followed in the Determination of an Administrative Fine in terms of section 22A of the Act, 2016 ( gazette). The regulation enables the licensing authority to calculate the fine based on:

- The number of years that the facility has operated without a licence (starting from the effective date Section 22A i.e. 2013; and
- Whether the facility is located in an area declared as national priority area in terms of section 18 of the AQA.

If it comes to the attention of the licensing authority that the applicant is under criminal investigation for the contravention of, or failure to comply with section 22, the licensing authority may defer a decision to issue a provisional atmospheric emission licence or an atmospheric emission licence until such time that the investigation is concluded. In this regard, the submission of an application or the issuing of a provisional atmospheric emission licence or an atmospheric emission licence in terms of AQA Section 22A, or the payment of an administrative fine, must— (a) in no way derogate from the authority of the environmental management inspector or the South African Police Service, to investigate any transgression of this Act; (b) in no way derogate from the National Prosecuting Authority's legal authority to institute any criminal prosecution; or (c) not indemnify the applicant from liability in terms of section 51(1)(a).

The procedure for processing applications for an AEL in accordance with section 22A is outlined in Figure 18: Section 22A process flow cart below.

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**Minimum requirements**

- Administrative fine
- Specialist Air Quality Impact Report;
- Public Participation Report
- Emissions Monitoring Report (if any);
- Waste License (if applicable);
- License Processing Fee
- Any other addition information that may be required

**Processing Time Frame: 60 days from acknowledgement of receipt of proof of fine payment by the AELA**

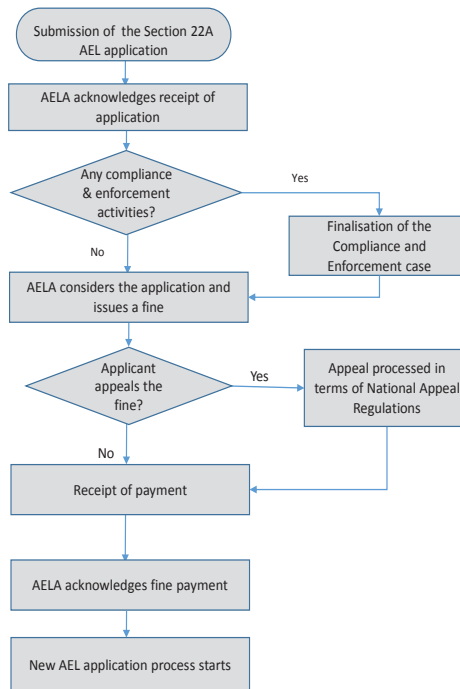


Figure 18: Section 22A process flow cart



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## 5.7 Compliance monitoring

### 5.7.1 Introduction

An important element of the environmental governance cycle is that of ensuring compliance with air quality management requirements as stated in the relevant legislation. A number of tools are provided for in the AQA, including compliance monitoring, the provision of emission control officers, and processes for voluntary compliance measures. These tools allow for the analysis of the compliance of various regulated activities, and are used in relation to the most appropriate level of government.

### 5.7.2 National measures

National responsibilities in terms of compliance monitoring relate to responsibility in respect of international commitments, monitoring compliance with goals of national Priority Area AQMPs (See Paragraph 5.4.5) and with conditions relevant to air quality contained in Authorisations issued by national government. Reporting on compliance will be included in the national AQO's annual report.

National government will further undertake compliance monitoring on behalf of provinces if province fails to fulfil its executive obligation in this respect (See Chapter 3 of this document on roles and responsibilities).

EMI at the National Department may conduct compliance monitoring activities in any facility issued with an AEL within the country. The National Department EMIs should inform and share the findings of the compliance monitoring activities with the responsible licensing authority.

### 5.7.3 Provincial measures

The provincial AQO is responsible for monitoring compliance with the targets specified in the provincial AQMP and for reporting compliance in the annual report. The provincial AQO is also responsible for compliance monitoring with the conditions relevant to air quality contained in EIA and AEL authorisations that are issued by the province.

### 5.7.4 Municipal measures

The municipality AQO also has compliance monitoring and reporting requirements regarding AQMPs that are consistent with requirements at national and provincial levels. Compliance monitoring at municipal level deals specifically with AELs, and uses licences as the primary means to ensure compliance with ambient air quality standards.

The Atmospheric Impact Reports are an additional means of monitoring compliance and can be requested of any individual that is under reasonable suspicion of contravening the AQA or causing negative impacts, as well as within the context of a licensing process (See Paragraph 5.5.4).

In addition, the municipality are also responsible for compliance monitoring for dust generating activities as contemplated in the national Dust Control Regulations (described in section 5.4.3.8.), as well as compliance monitoring with respect to any notice issued in terms of section 23 of AQA.

## 5.8 Enforcement

In terms of Chapter 7 of the NEMA, the functions of the Environmental Management Inspectors (EMIs) are to monitor compliance with, and enforce the NEMA and specific environmental management legislation, known as "specific environmental management acts".

The following officials may be designated as EMIs:

- Officials in the national department and other organs of state. These officials are designated by the Minister.
- Officials in provincial environmental departments and provincial organs of state, and municipalities. These officials are designated by the MEC.

Officials designated as EMIs in terms of the NEMA are able to enforce the AQA. EMIs are given a range of powers that include rights of inspection, investigation, gathering of evidence and enforcement, to enable them to fulfil their functions.

### 5.8.1 Offences

Section 51(1) of the AQA, a person is guilty of an offence if that person:

- conducts a listed activity without a provisional AEL or AEL as of the 1<sup>st</sup> April 2013;
- contravenes or fails to comply with a condition or requirement of an AEL;
- emits air pollutants at concentrations above emission limits specified in an AEL as a result of a listed activity;
- manufactures, sells or uses any appliance or conducts an activity declared as a controlled emitter, that does not comply with specified standards;
- operates a controlled emitter when emissions from that controlled emitter do not comply with standards;
- fails to take all reasonable steps to prevent the emission of any offensive odour caused by an activity on their

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premises:

- fails to submit or to implement a pollution prevention plan when required to do so;
- fails to submit an atmospheric impact report when required to do so;
- fails to notify the Minister of the likely cessation of mining activities and the plans that are in place for rehabilitation and the prevention of pollution by dust once mining operations have ceased;
- supplies false or misleading information in an application for an AEL, or for the transfer, variation or renewal of such a licence;
- supplies false or misleading information to an AOO;
- contravenes or fails to comply with a condition subject to which exemption from a provision of this Act was granted in terms of Section 59.

Penalties (Section 52 of the AQA) may be incurred if a person is convicted of an offence as described above. A person is liable to a fine not exceeding R5 million, or to imprisonment for a period not exceeding 5 years and in case of a second or subsequent conviction, to a fine not exceeding 10 years or in both instances to both a fine and such imprisonment. A fine must be determined with due consideration of the following factors:

- the severity of the offence in terms of the impact, or potential impact, on the health, well-being, safety and the environment;
- the monetary or other benefits which accrued to the convicted person through the commission of the offence; and
- the extent of the convicted person's contribution to the overall pollution load of the area under normal working conditions.

In addition to penalties, other regulatory tools include an Atmospheric Impact Report (section 30 of the AQA), which is discussed in detail in Paragraph 5.5.4 of this document, and a Pollution Prevention Plan (section 29 of the AQA). The Minister or MEC may declare any substance contributing to air pollution as a priority air pollutant, and require any person responsible for the emission of such a substance to prepare, submit for approval and implement a pollution prevention plan in respect of a substance declared as a priority air pollutant.

## 5.8.2 By-laws

### 5.8.2.1 *Local government competence*

Section 156 of the Constitution of the Republic of South Africa, 1996, provides for the powers and functions of municipalities. Section 156(1)(a) of the Constitution of the Republic of South Africa states that "A municipality has executive authority in respect of, and has the right to administer the local government matters listed in Part B of Schedule 4 and Part B of Schedule 5".

Section 156(2) of the Constitution of the Republic of South Africa, 1996 – "A municipality may make and administer by-laws for the effective administration of the matters which it has the right to administer". Section 156(3) of the Republic of South Africa, 1996 – "A by-law that conflicts with national or provincial legislation is invalid. If there is a conflict between a by-law and national or provincial legislation that is inoperative, the by-law must be regarded as valid for as long as that legislation is inoperative".

### 5.8.2.2 *Schedule 4 functional areas*

In Part A of Schedule 4 of the Constitution of the Republic of South Africa, 1996, which are the (functional areas of concurrent national and provincial legislative competence), one of the functional areas listed is "pollution control" while "air pollution" is listed in Part B of Schedule 4. This means that national and provincial spheres of government must cooperate in regulating and/or administering pollution control matters, while local government has exclusive executive and administrative authority in dealing with air pollution matters. In addition, in terms of Section 151(4) of the Constitution of the Republic of South Africa, 1996, the national or a provincial government may not compromise or impede a municipality's ability or right to exercise its powers or perform its functions.

### 5.8.2.3 *Model air pollution control by-laws*

Section 46(1) of the NEMA allows the Minister to make model by-laws aimed at establishing measures for the management of environmental impacts of any development within the jurisdiction of a municipality, which may be adopted by a municipality as municipal by-laws. In terms of section 46(2) of the NEMA, any municipality may request the Director-General to assist it with the preparation of by-laws on matters affecting the environment and the Director-General may not unreasonably refuse such a request.

The AQA brings the system of air pollution control in line with the constitutional allocation of functions between the national, provincial and local spheres of government. It is within this constitutional approach and cooperative governance that the department has developed model air pollution control by-laws on the 2<sup>nd</sup> of July 2010 (Gazette No. 3342; Notice 579). The

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by-laws were published under AQA and may be adapted and adopted by municipalities. The objective of the model air pollution control by-laws is to ensure uniformity across the country on air quality management and not to impose the model bylaw on municipalities. The uniformity in air quality management will nonetheless assist government in implementing and enforcing air quality management plans and achieving acceptable ambient air quality.

One of the purposes, as set out in section 46(4) (a) of the NEMA, is to mitigate adverse environmental impacts. The model by-laws include measures for environmental management, including the following –

- auditing, monitoring and ensuring compliance; and
- reporting requirements and the furnishing of information.

## 5.9 Cross-cutting principles

### 5.9.1 Public Participation

#### 5.9.1.1 *The importance of public participation in air quality decision-making*

Government plays a crucial role in achieving and maintaining clean air in South Africa, but it cannot reach this goal alone. Active participation and contributions from individual citizens and citizen groups is of utmost importance in developing, implementing and enforcing air quality management decisions within the context of the AQA. The potential benefits of public participation are numerous. If well-planned and managed, public participation can bring new and important knowledge to the table, mediate between conflicting perspectives early in the process and facilitate more efficient air quality governance. Equally important, public participation in air quality management plays a vital role in strengthening and deepening democracy in South Africa and in giving effect to the constitutional right to an environment which is conducive to health and well-being.

Section 4(2) of the NEMA, which is the overarching environmental law in South Africa embodies a number of principles aimed at ensuring effective and equitable public participation. These principles were listed in Paragraph 1.4 of this document.

#### 5.9.1.2 *Promoting best practices for effective and equitable public participation*

When designing and implementing air quality decision-processes, all three spheres of government in South Africa must strive to apply best practices of engaging with stakeholder groups and citizens, with the goal of reaping the full benefits of public participation. Although the AQA prescribes a standard approach to participation in its Sections 56 and 57, experience suggests that implementing the following measures and principles will significantly contribute towards ensuring effective and equitable participation, as called for in the NEMA. However, experience has also shown that a “one-size-fits-all” approach to public participation is not always effective or efficient and, as such, a flexible and innovative approach to participation must be considered.

#### 5.9.1.3 *Provision of up-to-date information on project activities*

To keep stakeholders informed about on-going and planned air quality management projects and decision-processes (and related public participation opportunities), all three spheres of government must make relevant information available in a timely manner through, for example, dedicated air quality management websites and other suitable means, such as actively notifying known stakeholders (See information dissemination in Paragraph 5.9.3, page 91). At the national level, the DEA will publish a monthly newsletter, the *National Air Quality Office News*, providing a regular overview of on-going and planned air quality related projects, decision-processes and other initiatives. In addition to websites and newsletters, other media will be considered to reach communities (See Paragraph 5.4.2).

#### 5.9.1.4 *Effective announcement of public participation opportunities*

Public participation opportunities for air quality decision-processes referred to in the AQA must be publicised on the national department websites and in other appropriate media and notifications sent electronically to stakeholders directly using up-to-date databases and electronic mailing lists. Special efforts will be made to ensure that vulnerable and affected communities are informed about relevant decision-processes. Information on the stage in the decision-process at which public participation is planned and the type of public participation activities envisaged will assist stakeholders in planning their participation and assigning necessary time and resources. It will also allow stakeholders to suggest possible adjustments to the envisaged public participation process early in the decision-process.

#### 5.9.1.5 *Ensuring early and balanced participation*

Public participation must take place early in the process, when key options are still open. This will ensure that all perspectives are captured and can be properly assessed at the outset. It will also ensure that all stakeholder groups have equal opportunities to convey their views. For major decision-processes, consideration must be given to the organisation

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of stakeholder workshops and other participatory tools that facilitate in-depth interaction and deliberation at early stages, and which promote face-to-face dialogue.

#### 5.9.1.6 *Responding to stakeholder contributions*

Providing feedback and acknowledging written contributions from stakeholders is considered essential to participatory processes and will strengthen the relationship and build trust between government and the public. To address related stakeholder expectations in a practical manner, government must prepare concise response documents that explain the rationale for final decisions or outcomes. Government must also provide explanation on why important comments may not have been addressed. The response document must be made available to the public on request.

#### 5.9.1.7 *Addressing the needs of vulnerable groups*

Vulnerable groups and communities have specific needs in order to effectively participate in air quality decision-making. Capacity constraints include lack of technical and human resources as well as lack of financial resources to attend meetings. Government must take cognisance of these constraints when organising meeting locations and times and when setting timelines for public comment.

#### 5.9.1.8 *Professional and skilled process management*

Ensuring that public participation processes are managed in a professional manner will enhance the quality of engagement and strengthen the relationship of government with stakeholders. Relevant measures include, for example, neutral facilitation of meetings, making meeting and workshop reports available in a timely manner, and keeping stakeholders informed concerning follow-up activities. The national department will engage, as appropriate, in capacity building activities aimed at strengthening the skills of officials in all spheres of government concerning effective management of stakeholder processes.

#### 5.9.1.9 *Issues relevant for specific air quality decision-processes*

The AQA includes more than 20 sections authorising government to initiate subsidiary decision-processes. In addition, there are public participation requirements in other existing legislation, such as the Promotion of Access to Information Act, Promotion of Administrative Justice Act, the Public Audit Act and the Municipal Systems Act apply. Government is responsible for the implementation of public participation in development of air quality management tools including the standard setting process and air quality management planning (See Chapters 3 and 4 of this document). Participation in the emission licensing process falls under the responsibility of the applicant (See Paragraph 5.5.2 of this document).

#### 5.9.1.10 *Raising awareness and engaging the public in air quality decision-processes*

Progress towards achieving the goal of clean air in South Africa requires raising awareness and the meaningful involvement of all citizens (See Paragraph 5.4.2 of this document on awareness-raising and Paragraph 5.9.2 of this document on capacity development).

### 5.9.2 Capacity development

#### 5.9.2.1 *Introduction*

Capacity development is a cross-cutting issue that underpins every element of the environmental governance cycle illustrated in Figure 1. Within the AQA, capacity development is not explicitly addressed, however, its consideration and inclusion is necessitated by the obligation for the fulfilment of the duties and responsibilities stipulated in the AQA and elaborated upon in Chapters 3 and 4 of this document.

The scarcity of skills in South Africa is a key constraint to service delivery within both government and the country at large. National government has recognised this through the passing of the Skills Development Act (Act No. 97 of 1998), which aims to provide an institutional framework to devise and implement strategies to develop and improve the skills of the South African workforce. The national department has taken up the challenge through the initiation of an internship programme and the development of an internship policy, and by addressing capacity development as an integral part of many of their projects.

Whilst the skills shortage applies generally in South Africa, the shortage is critical in the field of air quality. The limited pool of current air quality specialists, along with the paradigm shift in approach to air quality management, justifies the need for urgent intervention. A multi-pronged approach to capacity development is needed, where tertiary level training at regional centres, complemented by in-service training, and other interventions are considered. In addition, there is the need for capacity development amongst the general public in order to ensure that civil society can fully contribute to the air quality management process in an effective manner. These latter aspects were addressed in Paragraph 5.4.2 of this document.

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*5.9.2.2 Definition of capacity building*

Although capacity development is often seen as simply the provision of extra financial or staff resources, or the provision of extra skills through training and education, capacity development must be seen as the attempt to build an organisation's capacity to fulfil its role efficiently and effectively. The section below therefore describes a diverse range of strategies that can be implemented to allow effective and appropriate air quality work to be carried out at all levels of governance.

*5.9.2.3 Strategies for capacity building*

Strategies of capacity development can be distinguished based on the proposed outcomes and the approach of stakeholders to the project. They are categorised as follows:

- Applying additional financial and physical resources - addressing a simple lack of resources within a well-managed organisation to stimulate growth;
- Improving the organisational and technical capabilities - addressing lack of technique and proper structure through activities such as technical assistance, training, systems improvement and better working conditions;
- Helping to settle on a clear strategic direction - addressing lack of consistent direction, overextending, inappropriate objectives or lack of political consensus on organisational purpose though inducing policy dialogue for action and capacity development;
- Protecting innovation and providing opportunities for experimentation and learning - addresses lack of a protected learning space through development of social capital and creation of opportunities to experiment and learn;
- Strengthening the bigger organisational system - addresses systemic capacity through emphasising the development of interrelationships and resolving public policy issues collectively – public-private partnerships;
- Helping to shape an enabling environment - addresses the lack of an enabling environment through creating protected pockets of capacity development or trying to improve institutions and broader social and political patterns;
- Creating more performance incentives and pressures - addresses structural incentives that lead to poor performance by redesigning organisations and improving the overall approach to governance and democratisation.

By identifying the type of strategy to be pursued based on the desired outcomes as well as informed by the current context of capacity, the most appropriate path of capacity development can be followed. This allows the outcomes of the programme or project to fulfil the need identified prior to implementation.

Implicit in the list of strategies outlined above, is recognition that capacity development is much more than training and awareness programmes for individuals. It is also about organisational, management, financial and technical systems and procedures. Having noted this broad definition, proposed interventions for improving technical capacity in the field of air quality management are presented in the next section.

*5.9.2.4 Technical capacity development*

A variety of interventions is needed to address the skills shortage in air quality management. All are relevant, with some addressing longer term needs, others the immediate needs and others the need for an informed public.

*Tertiary level qualifications*

Tertiary level programmes present a long term planning measure aimed at securing future capacity in the field of air quality management. They provide an opportunity to enhance research in the field and to add to the national body of knowledge on air quality management. These inputs are necessary to guide the implementation of the AQA into the future.

There is a need to strengthen tertiary institution offerings in the air quality field. There are few national specialists in air quality and they are scattered across a handful of institutions around the country. A coordinated approach to offering a post-graduate qualification (NQF level 7 and/or 8 i.e. the equivalent of Honours and/or Masters degrees), which could be jointly offered at one or more institutions is recommended.

*Internships*

Internships provide a means to invest in young people and to provide them with relevant experience that will enable them to function effectively in the work place in the future. These programmes are targeted at providing on-the-job training under the guidance of a mentor and they provide a useful bridge between formal tertiary level training and employment. Internships also provide a means to directly transfer the expertise of people with long-standing professional experience to those with only a practical or theoretical training.

*In-service short courses*

Short courses provide a means of addressing current capacity needs and targeting particular people and skills that are most urgently needed for intervention. Short training courses, generally ranging from one to five days, are the fundamental

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aspect of capacity development for those who are already in employment. They provide a means for building on existing skills, refreshing or updating skills, for imparting specialist knowledge, and importantly they directly enhance the internal capacity in an organisation. In many cases single day courses can provide sufficient steerage in the process for AQOs to learn about key issues and follow up any specific issues relating to their own local issues through the means of a helpdesk facility (see below).

The most urgent need is for capacity development amongst government officials at all levels tasked with implementing the AQA. To this end, the national department will consider the development of a suite of air quality modules which could be South African Qualifications Authority (SAQA) accredited at NQF level 7 and delivered to relevant government officials in all spheres of government. In this regard, the use of e-learning through the SAAQIS (see Paragraph 5.2.1.7 of this document) will be investigated to provide broad access to the short courses.

A modular structure is proposed, with modules falling into one of the following categories:

- Bridging training module – a single module on air quality science designed to impart basic knowledge to an employee with no previous formal air quality courses;
- Basic training modules – a suite of modules designed to provide basic detail on all aspects of air quality management – both the scientific aspects and also the policy context;
- Specialist training modules – a suite of modules designed to provide advanced training in selected topics;
- Refresher training module/s – a module designed to provide scientific and technological updates on air quality science.

#### *Partnerships*

Bilateral partnerships (e.g. municipality-municipality and province-province) are an excellent means of promoting the replication of best practices and lessons learned, and allowing smaller, less capacitated provinces and municipalities to benefit from the experiences of their stronger counterparts. Pilot projects will be initiated by the national AQO and each of the provincial AQOs.

#### *Forums*

Quarterly provincial forums between province and municipalities as outlined in Paragraph 4.4.5 of this document must be used as a capacity development platform for provincial and municipal officials. Such forums can promote the sharing of experiences, the dissemination of ideas and the replication of best practice. These forums are important both in building a sense of 'community' within the air quality profession, as well as playing a key role in the feeding of information on the effectiveness of the air quality management process upwards from municipal to national levels.

#### *Public awareness campaigns*

Capacity development is not confined to individuals working in the air quality field. There will also be awareness-raising amongst the general public using the approaches outlined in Paragraph 5.4.2 of this document. An informed and knowledgeable civil society leads to better decision-making.

#### *Guidance*

One of the key strategies for approaching the issue of capacity development is not to rely on there being a dispersed number of individual expert AQOs all trained to carry out their roles independently. Effective use of resources requires that specialist AQOs are used where they are needed most, where there are numerous pollution sources – or other issues leading to poor air quality. Where expert AQOs are not needed, all that is required is sufficient capacity to be able to ensure that good air quality is maintained.

One way to ensure that non-specialist AQOs are capable of making this judgement is by setting out clear and detailed guidance as to how initial screening and scoping analyses should be carried out. When these studies indicate the likelihood of a significant threat to good air quality, the municipal government will then be able to decide the most appropriate means to approach the problem (for example seeking new skilled officers or training up existing staff).

This guidance can also be used to outline key technical aspects of more advanced analyses; however, the basic role is to ensure that initial assessment of local air quality issues is carried out in a reliable and consistent manner which does not necessarily rely on the technical expertise of the officer responsible. By ensuring that this guidance is clear and prescriptive, it can also play an important role in developing the basic skills of untrained AQOs.

#### *National AQO communiqués*

Based on frequently asked questions in the various intergovernmental air quality governance forums (see Paragraph 4.4 of this document), the National AQO will continue to compile various discussion, briefing and guidance documents aimed

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at providing guidance on air quality governance issues. The documents are circulated to all government air quality managers.

### 5.9.3 Information dissemination

All aspects of implementing the National Framework require the dissemination of information. The main instrument of dissemination of information will be through the SAAQIS. However, the SAAQIS has limitations in this regard in that it does not necessarily provide access to all stakeholders, especially those that do not have the necessary technology or prior exposure to air pollution information. This means that a strategy for reaching these parts of the population must be developed and tools other than the SAAQIS are needed.

The dissemination of information will raise awareness in the population and this awareness will greatly support the achievement of compliance with air quality standards. Dissemination of information is a skill and experts may be employed to inform and/or drive this process. At the same time, on-going public participation processes will identify the best ways of effectively communicating with all stakeholder groups of the population (see also 5.2.1.3 of this document). The following approaches to disseminating air quality information will be considered, amongst others:

- Newspaper articles;
- Booklets/Pamphlets /brochures/leaflets;
- Posters on air pollution in central places such as schools and hospitals;
- Radio, national and local;
- TV;
- Public meetings;
- Bill boards; or
- Website.

Key information will, where appropriate, be made available in more than one South African official language. The dissemination of information can be done through different stakeholders. Possible routes for dissemination may include:

- The formal schooling system;
- Programmes targeting women;
- Programmes targeting health professionals;
- Programmes targeting political bodies and parties;
- Programmes targeting religious organisations;
- Programmes targeting industry; or
- Programmes targeting NGOs.

To be able to conduct successful awareness-raising, information is required at the appropriate technical level and teachers (or facilitators) need to be trained in the subject matter. The SAAQIS will have a dedicated facility for educational and awareness-raising material so that it is readily available for course presentations and awareness-raising campaigns. Based on this, material and courses can be accessed, printed and copied and made available.

### 5.9.4 National Air Quality Officer's (NAQO) Report

The National Air Quality Officer will report on an annual basis on the progress relating to the implementation of the National Framework (see also Paragraph 5.2.3.2 of this document). The reports will be issued annually and will be based on the previous year's assessment indicators but will also allow the reporting of additional information relating to the implementation of the National Framework. The draft report will be presented by the National Air Quality Officer during the Annual Air Quality Governance Lekgotla, with the final report published by March each year.

This report will include:

- Progress with respect to implementation of the National Framework;
- Progress on implementation of provincial and municipal AQMPs;
- A list of priority issues collated by air quality officers at a national, provincial and regional level;
- An identification of recommendations that are required to improve the indicator output;
- Recommendations for the development of new indicators or the amendment of existing indicators;
- A commentary by the national department on the recommendations and proposals, and taking appropriate action

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on these recommendations over the subsequent 12 months.

Table 19: The National Air Quality Officer's Annual Report related implementation targets

| Key milestones  | Target date          |
|---|----------------------|
| Publication of the National Air Quality Officer's Annual Report | Annually from 2007/8 |

A set of indicators have been established to guide this review (appendix 3: INDICATORS TO BE INCLUDED IN THE NATIONAL AQO'S ANNUAL REPORT). These indicators will have three basic functions; to simplify, quantify and communicate key information about both the quality of air in South Africa, and the efficacy of the air quality management process itself.

The assessment indicators will be:

- objective;
- scientifically sound;
- easily understandable and explainable;
- able to develop and illustrate trends over time and differences between geographical areas;
- sensitive to the change that they are intended to measure;
- measurable and capable of being updated regularly; and
- based on readily available data and information.

## 6. THE NATIONAL FRAMEWORK REVIEW PROCESS

### 6.1 Background to the National Framework review process

According to section 7(5) of the AQA, the National Framework "must be reviewed by the Minister at intervals of not more than five years", section 7(6) of the AQA continues, "Before publishing the National Framework, or any amendments to the framework, the Minister must follow a consultative process in accordance with sections 56 and 57". (Section 56 and 57 of the AQA outline the consultative and public participation processes to be considered). To ensure that the National Framework is both efficient and effective it is essential that both the air quality and the governance processes are continually assessed.

The 2012 National Framework provided a timetable for the review of the framework (refer to figure 12 of the 2012 National Framework). This version of the National Framework serves as the 3<sup>rd</sup> generation National Framework following the review process conducted in 2017. The amended timetable for the review of the National Framework is therefore suggested in the Figure 19.

The NAQO report and recommendations from AQOs and stakeholders will inform the review process.



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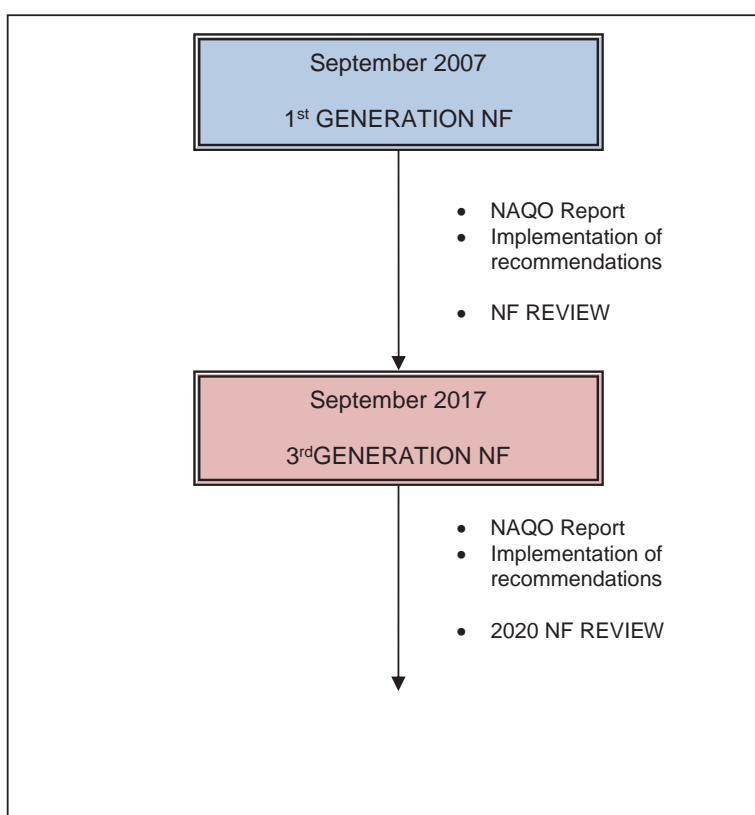


Figure 19: Timetable for the National Framework review process

The process of reviewing the National Framework over the next five years will centre on two key activities (see Figure 19):

- The National Air Quality Officer's Annual Report, including reporting on the National Framework Assessment Indicators and implementation of recommendations from the said report; and
- An Independent Review of the National Framework.

## 6.2 Review of the National Framework

The 5 year review of the National framework must be undertaken to ensure assessment of the implementation of the process. The review will incorporate extensive consultation with various stakeholders including, but not limited to, members of the National-Provincial AQO forum, the Provincial-Municipal AQO forum, air quality practitioners and other interested parties including representatives of industry, NGOs and civil society groups. The outcome of the consultation should be a review report which the Department should consider for any potential redrafting of the 2022 national Framework. .

The review of the National Framework should incorporate:

- all of the beneficial aspects and lessons learnt in the existing National Framework development and consultation phases;
- all recommendations generated over the previous 5 years in the National Framework Indicator Assessment Reports (in the NAQO report), and the Independent Review;
- an assessment of the review process itself.

As stated in section 7(6) of AQA, before publishing the National Framework, or any amendments to the framework, the Minister must follow a consultative process in accordance with sections 56 and 57 of the AQA. At these consultative stages

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there is also the opportunity to include a Horizon Scanning exercise to further identify any information gaps and future issues for consideration.

### 6.3 Progress with respect to the 2012 National Framework Indicators

The 2012 National Framework listed several indicators for its implementations which were adopted from the inaugural 2007 framework. Progress against indicators and targets set out in the 2012 National Framework is outlined in Table 20 below:

Table 20: Progress against the 2012 National Framework indicators

| SUMMARY OF PROGRESS IN RESPECT OF THE 2012 NATIONAL FRAMEWORK INDICATORS |   |                         |                                   |   |   |
|--|---|-------------------------|-----------------------------------|---|---|
| Progress rating key  | Complete/ target exceeded/ target met   | On track to meet target | Target not met, but good progress | Little, if any, progress  | No information available at time of writing |
| No.  | Indicator   | Baseline (2012)         | Target                            | Progress as in 2017   |   |
| 1.   | Problem Identification and Prioritisation   |                         |                                   |   |   |
| 1.1  | Number of pollutants with associated ambient air quality standards.   | 8                       | 9                                 | In progress for H2S.  |   |
| 1.2  | Initial set of Listed Activities identified with associated minimum emission standards.                                     | 1                       | 1                                 | Achieved.<br>Indicator will be removed because there is no new target to-date.                                  |   |
| 1.3  | Number of National Priority Areas declared  | 3                       | 3                                 | Achieved.<br>Indicator will be removed because there is no new target to-date.                                  |   |
| 1.4  | Number of Provincial Air Quality Areas declared.  | 0                       | 1                                 | Little Progress.<br>Indicator will be removed because there is no new target to-date.                           |   |
| 1.5  | Number of Metropolitan and District Municipalities with air quality that does not conform to ambient air quality standards. | 21                      | 15                                | Good progress made.<br>Indicator difficult to measure and hence will be removed. The NAQI will be used instead. |   |
| 1.6  | Number of Controlled Emitters declared.   | 3                       | 3                                 | Achieved.<br>Indicator will be removed because there is no new target to-date                                   |   |
| 1.7  | Number of Controlled Fuels declared.  | 0                       | 0                                 | Achieved.   |   |

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| SUMMARY OF PROGRESS IN RESPECT OF THE 2012 NATIONAL FRAMEWORK INDICATORS |   |                         |                                   |   |   |
|--|---|-------------------------|-----------------------------------|---|---|
| Progress rating key  | Complete/ target exceeded/ target met   | On track to meet target | Target not met, but good progress | Little, if any, progress  | No information available at time of writing                   |
| No.  | Indicator   | Baseline (2012)         | Target                            | Progress as in 2017   |   |
|  |   |                         |                                   |   | Indicator will be removed because there is no target to-date. |
| 2.   | Strategy development  |                         |                                   |   |   |
| 2.1  | Number of National Priority Area AQMPs under implementation.                      | 3                       | 3                                 | Achieved.<br>Indicator will be removed because there is no new target to-date.                                |   |
| 2.2  | Number of Provincial Priority Area AQMPs under implementation.                    | 0                       | 1                                 | No declaration of Provincial PA to-date.<br>Indicator will be removed because there is no new target to-date. |   |
|  | Number of Provinces with AQMPs in place.  | 6                       | 9                                 | 6 of 9 provinces have AQMPs as in baseline<br>Indicator maintained.   |   |
| 2.3  | Number of Metropolitan and Municipalities with AQMPs in place.                    | 44                      | 53                                | Approx. 21 districts, 7 metros and 23 locals municipalities have AQMPs.<br>Indicator maintained.              |   |
| 2.4  | Strategy for addressing air pollution in dense, low-income settlements published. | 1                       | 1                                 | Strategy was published for public comment.<br>Indicator maintained.   |   |
|  | Integrated strategy for the control of vehicle emissions published.               | 1                       | 1                                 | Strategy compiled and finalised but not published   |   |
| 3.   | Standard-setting  |                         |                                   |   |   |
| 3.1  | Identify additional pollutants requiring ambient air quality standards.           | 1                       | 1                                 | Investigations for H2S standard ongoing<br>Indicator  |   |

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| SUMMARY OF PROGRESS IN RESPECT OF THE 2012 NATIONAL FRAMEWORK INDICATORS |   |                         |                                   |  |   |
|--|---|-------------------------|-----------------------------------|--|---|
| Progress rating key  | Complete/ target exceeded/ target met   | On track to meet target | Target not met, but good progress | Little, if any, progress   | No information available at time of writing |
| No.  | Indicator   | Baseline (2012)         | Target                            | Progress as in 2017  |   |
|  |   |                         |                                   |  | maintained.                                 |
| 3.2  | Number of pollutants with associated ambient air quality standards.                           | 8                       | 9                                 | Indicator will be removed because there is no new target to-date   |   |
| 3.3  | Initial set of Listed Activities identified with associated minimum emission standards.       | 1                       | 1                                 | MES published.<br>Indicator will be removed because there is no new target to-date.                        |   |
| 3.4  | Number of Controlled Emitters and associated standards declared.                              | 1                       | 3                                 | 3 notices published.<br>Indicator will be removed because there is no target to-date.                      |   |
| 3.5  | Number of Controlled Fuels and associated standards or prohibitions declared.                 | 0                       | 0                                 | Indicator will be removed because there is no new target to-date.  |   |
| 4.   | Awareness-raising   |                         |                                   |  |   |
| 4.1  | Number of air quality related publications available.   | 10                      | 23                                |  |   |
| 5.   | Air Quality Impact Management   |                         |                                   |  |   |
| 5.1  | Number of National Priority Area AQMPs under implementation.                                  | 3                       | 3                                 | Achieved.<br>Indicator maintained.   |   |
| 5.2  | Number of Provincial Priority Area AQMPs under implementation.                                | 0                       | 1                                 | No provincial priority area declared.<br>Indicator will be removed because there is no new target to-date. |   |
| 5.3  | Number of Cleaner Production best practise guidelines published.                              | 1                       | 3                                 | Achieved   |   |
| 5.4  | Regulation in respect of the prescribed form for Atmospheric Impact Report (S.30 of the AQA). | 1                       | 1                                 | Achieved.<br>Indicator will be removed because there is no new target to-date.                             |   |
| 6.   | Atmospheric Emission Licensing  |                         |                                   |  |   |
| 6.1  | AEL Manual published.   | 1                       | 1                                 | Indicator will be removed because  |   |

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| SUMMARY OF PROGRESS IN RESPECT OF THE 2012 NATIONAL FRAMEWORK INDICATORS |  |                         |                                   |                          |  |
|--|--|-------------------------|-----------------------------------|--------------------------|--|
| Progress rating key  | Complete/ target exceeded/ target met  | On track to meet target | Target not met, but good progress | Little, if any, progress | No information available at time of writing  |
| No.  | Indicator  | Baseline (2012)         | Target                            | Progress as in 2017      |  |
|  |  |                         |                                   |                          | there is no new target to-date.  |
| 6.2  | Atmospheric Emission License Processing Fee Calculator published.                  | 1                       | 1                                 |                          |  |
| 6.3  | Annual progress report on the National Licensing Authorities 'support programme.   | 1                       | 5                                 |                          | Indicator will be removed because there is no new target to-date.                          |
| 7.   | Compliance Monitoring  |                         |                                   |                          |  |
| 7.1  | Number of government ambient air quality monitoring stations.                      | 94                      | 100                               |                          | >130 monitoring stations.<br>Target modified.  |
| 7.2  | Number of EMIs trained in air quality compliance monitoring.                       | 260                     | 300                               |                          | Number to be verified.<br>Indicator maintained.  |
| 7.3  | Number of Atmospheric Emission License holders submitting annual emission reports. | -                       | -                                 |                          | No target provided.<br>Indicator maintained.   |
| 8.   | Enforcement  |                         |                                   |                          |  |
| 8.1  | Number of EMIs designated  | -                       | -                                 |                          | Numbers to be verified.<br>Indicator maintained.   |
| 8.2  | Model Air Pollution Control By-Laws.   | 1                       | 1                                 |                          | Achieved.<br>Indicator will be removed because there is no new target to-date.             |
|  | Number of District and Metropolitan Municipalities with air pollution by-laws.     | -                       | -                                 |                          | Number to be verified.<br>Indicator to be deleted because the number depends on need basis |
| 9.   | Information Management   |                         |                                   |                          |  |
| 9.1  | SAAQIS Phase 1 – ambient air quality module and associated packages.               | 1                       | 1                                 |                          |  |
| 9.2  | SAAQIS Phase II system completed.  | 1                       | 1                                 |                          | Phase II completed as NAEIS  |

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| SUMMARY OF PROGRESS IN RESPECT OF THE 2012 NATIONAL FRAMEWORK INDICATORS |  |                         |                                   |                          |   |
|--|--|-------------------------|-----------------------------------|--------------------------|---|
| Progress rating key  | Complete/ target exceeded/ target met  | On track to meet target | Target not met, but good progress | Little, if any, progress | No information available at time of writing   |
| No.  | Indicator  | Baseline (2012)         | Target                            | Progress as in 2017      |   |
|  |  |                         |                                   |                          | Indicator will be removed because there is no new target to-date.                     |
|  | Format required for the internet-based National Atmospheric Emissions Inventory Reporting established by the National AQO. | 1                       | 1                                 |                          | As part of NAEIS<br>Indicator will be removed because there is no new target to-date. |
| 9.3  | National Atmospheric Emissions Inventory inclusion in the SAAQIS Phase II completed.                                       | 1                       | 1                                 |                          | Achieved.<br>Indicator maintained.  |
| 9.15   | Database of Listed Activities available in the SAAQIS.   | 1                       | 1                                 |                          | Achieved.<br>Indicator maintained.  |
| 9.16   | All current policy and legislation available in the SAAQIS   | 1                       | 1                                 |                          | Achieved.<br>Indicator maintained.  |
| 9.17   | Air quality scientific literature resource library.  | 1                       | 1                                 |                          |   |
| 9.18   | Norms and standards for air quality monitoring.  | 1                       | 1                                 |                          | Achieved.<br>Indicator maintained.  |
| 9.19   | All current available AQMPs.   | 1                       | 1                                 |                          | Achieved.<br>Indicator maintained.  |
| 9.20   | Support centre/help desk.  | 1                       | 1                                 |                          | Achieved.<br>Indicator maintained.  |
| 9.21   | DEA air quality publications and guideline documents.  | 1                       | 1                                 |                          | Achieved.<br>Indicator maintained.  |
| 9.24   | Key stakeholder database   | 1                       | 1                                 |                          | Achieved.<br>Indicator maintained.  |
| 10.1   | Participation in the Annual Air Quality Governance Lekgotla.   | 350                     | -                                 |                          | Numbers to be verified.<br>Indicator will be deleted.                                 |

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| SUMMARY OF PROGRESS IN RESPECT OF THE 2012 NATIONAL FRAMEWORK INDICATORS |   |                         |                                   |   |   |
|--|---|-------------------------|-----------------------------------|---|---|
| Progress rating key  | Complete/ target exceeded/ target met             | On track to meet target | Target not met, but good progress | Little, if any, progress                              | No information available at time of writing |
| No.  | Indicator   | Baseline (2012)         | Target                            | Progress as in 2017                                   |   |
| 10.2   | Number of operational Provincial-Municipal AQOFs. | 9                       |                                   | Numbers to be verified.<br>Indicator will be deleted. |   |

Given that the target for most of the indicators achieved and there is no intent to meet a new target in the next five years, it is recommended that such indicators be removed and be replaced with the new indicators listed in Appendix 1.

## 6.4 The future

The review process outlined in the previous section clearly establishes the principle of on-going change within the National Framework. In addition to the identification of improvements and refinements that can be made to the process, the success of the process itself will lead to further need to change and adapt the National Framework. Firstly, as the National Framework process leads to a more detailed assessment and analysis of air pollution in South Africa the development in air pollution science will potentially highlight new sources or other problems that were previously unseen and need to be taken into account by the National Framework. Secondly, as improvements are made to air quality by reductions in key primary pollutants and the targeting of issues that are relatively easily addressed, the significance of other pollutants (particularly secondary pollutants) will increase and the focus of the National Framework may need to be adjusted accordingly.

### 6.4.1 Horizon Scanning

In order that new and emerging issues can be identified and remedial actions formulated before they become problematic, it is useful to engage in the process of 'Horizon Scanning'. Horizon Scanning allows proactive rather than reactive development and delivery of preventative and adaptive policies and strategies. Horizon Scanning also provides the opportunity for the National Framework to remain abreast with international air quality management techniques, science and research. Horizon Scanning is a structured procedure for identifying issues and prioritising them according to their importance and relevance. It is based on risk assessment and ranks issues numerically according to their perceived scale, probability, trend, degree of recognition and potential impacts. The outcomes from Horizon Scanning exercises can be categorised as, for example, low probability but high consequence events such as pollution arising from extreme weather conditions, or alternatively high probability and high consequence events such as pollution from increased motor vehicle usage in urban areas.

The consultation workshops during Independent Review stage will include Horizon Scanning by relevant stakeholders including air quality practitioners and other stakeholders such as industry and the general public. All of the air quality issues that have been identified during the development of the preceding generations of the National Framework but have not been prioritised for action can be readdressed and reconsidered for inclusion in the next generation of the National Framework. Additionally, new and emerging issues can be logged and discussed at any stage by AQOs, air quality practitioners and members of the public through appropriate Air Quality Forums e.g. training events, awareness-raising events, municipal/provincial meetings etc. AQOs at municipal, provincial and national levels are responsible for maintaining an evolving list of priority and emerging issues. This list can be published annually in the annual National Framework Indicators Assessment Report (in the NAQO report).

### 6.4.2 Potential Issues for Future Development

Possible future issues and research priorities identified to date include but are not limited to:

- Consideration of new or emerging pollutants, their impact on health and the establishment of health-based

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objectives;

- Consideration of existing, new and/or emerging pollutants, their impact on the environment and ecosystems and the establishment of appropriate objectives;
- Development of proactive management of future potentially problematic sources (e.g. new fuels);
- Consideration of policies and strategies to address both climate change and air pollutant emissions to deliver co-benefit solutions;
- Investigation of trans-boundary air pollution sources and their impacts on South Africa;
- Development of strategies to deal with ambient concentrations of heavy metals and POPs, their impact and the establishment of suitable objectives;
- Development of strategies for tackling nuisance pollutants such as odours and dust and the establishment of guidelines and objectives for effective management;

## 7. REPEAL OF THE 2012 NATIONAL FRAMEWORK FOR AIR QUALITY MANAGEMENT IN THE REPUBLIC OF SOUTH AFRICA

The 2012 National Framework for Air Quality Management in the Republic of South Africa (Notice 919, Government Gazette No.37078) of November 2013 may be repealed.

## 8. SHORT TITLE AND COMMENCEMENT

This framework is called the draft 2017 national framework for air quality management in the republic of South Africa.



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## GLOSSARY AND DEFINITIONS

|                                  |  |
|----------------------------------|--|
| Air Quality Management Plan      | means a plan referred to in section 15 of AQA  |
| Air Quality Officer              | means an officer appointed in terms of section 14 of AQA as an air quality officer   |
| Ambient air quality standards    | values that define targets for air quality management and establish the permissible amount or concentration of a particular substance in or property of discharges to air based on what a particular receiving environment can tolerate without significant deterioration  |
| Atmospheric Emission Licence     | means an atmospheric emission licence contemplated in Chapter 5 of AQA   |
| Bioaccumulation                  | occurs when an organism absorbs a toxic substance at a rate greater than that at which the substance is lost, i.e. it accumulates the substance over time. Thus, the longer the biological half-life of the substance the greater the risk of chronic poisoning, even if environmental levels of the toxin are very low. |
| Clean technology                 | includes the wind power, solar power, biomass, hydropower, biofuels, information technology, electric motors, lighting, and many other appliances that are now more energy efficient.  |
| Clean fuels                      | any fuel that does not contain heavy metals and having a maximum benzene content of 3%, aromatics content of 42%, sulphur level of 500ppm and a maximum of oxygenate content of ethers and selected alcohols of less than 2.7%. Diesel that contains less than 500ppm of sulphur will also be included                   |
| Controlled emitter               | means any appliance or activity declared as a controlled emitter in terms of section 23 of AQA   |
| Controlled fuels                 | means any fuel as defined under Section 26 of AQA  |
| Cost- Benefit Analysis           | the process that involves weighing the total accepted costs against the total expected benefits in order to choose the best option   |
| Ecological degradation           | is related to the deterioration of the environment both in terms of quantity and extinction of some wildlife species and quality like air, water or land pollution   |
| Emission inventory               | a listing or register of the amount of pollution entering the atmosphere from all sources within a given time and geographic boundaries  |
| Emission standard                | a specific limit to the amount of pollutant that can be released to the atmosphere by a specified source   |
| Environmental Management Systems | a part of the management system of an organisation in which specific competencies, behaviours, procedures and demands for the implementation of an environment policy are defined  |
| Fugitive sources                 | sources of emissions that are difficult to identify and quantify. As the name implies, fugitive emissions include gases that "escape" from badly managed or maintained processes, e.g. leaky pipe-work   |
| Greenhouse gases (GHG)           | means gaseous constituents of the atmosphere, both natural and anthropogenic, that absorb and re-emit infrared radiation, and includes carbon dioxide, methane and nitrous oxide   |
| Homologated                      | an item that is accredited or approved by an authority   |
| ISO 14001                        | a system of environmental management standards that assist organisations to minimise the negative impacts, aid compliance and facilitate continual improvement   |

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|   |   |
|---|---|
| Listed activity                           | means any activity listed in terms of section 21 of AQA   |
| Mitigation measures                       | efforts to attempt to prevent pollution or to reduce the effects of pollution that occur  |
| Mobile source                             | means a single identifiable source of atmospheric emission which does not emanate from a fixed location   |
| Non-point source                          | means a source of atmospheric emissions which cannot be identified as having emanated from a single identifiable source or fixed location, and includes veld, forest and open fires, mining activities, agricultural activities and stockpiles  |
| Offensive odour                           | means any smell which is considered to be malodorous or a nuisance to a reasonable person   |
| Ozone- depleting substance                | means a substance having chemical or physical properties which, by its release into the atmosphere, can cause a depletion of the stratospheric ozone layer; i.e. chlorofluorocarbon (CFC) compounds, commonly called freons, and of bromofluorocarbon compounds known as halons CFCs, halons and other contributory substances are commonly referred to as ozone- depleting substances  |
| Persistent organic pollutants (POPs)      | organic compounds that are resistant to environmental degradation through chemical, biological, and photolytic processes. Because of this, they have been observed to persist in the environment, to be capable of long-range transport, bioaccumulate in human and animal tissue, bio-magnify in food chains, and to have potential significant impacts on human health and the environment i.e. aldrin, chlordane, DDT, dieldrin, endrin, heptachlor, hexachlorobenzene, mirex, polychlorinated biphenyls, polychlorinated dibenzo-p-dioxins, polychlorinated dibenzofurans, and toxaphene. |
| Point source                              | means a single identifiable source and fixed location of atmospheric emission, and includes smoke stacks and residential chimneys   |
| Priority area                             | means an area declared as such in terms of section 18 of AQA  |
| Priority area air quality management plan | means a plan referred to in section 19 of AQA   |
| Provisional atmospheric emission licence  | means a provisional atmospheric emission licence contemplated in Chapter 5 of AQA   |
| Quality assurance and control             | activities that determine the level of confidence in produced data and reduce error   |
| Stratospheric ozone depletion             | describes the observable decline of stratospheric ozone layer as a result of anthropogenic activities   |
| Sustainable development                   | Balancing the fulfilment of human needs with the protection of the natural environment so that these needs can be met not only in the present, but in the indefinite future. The term was used by the Brundtland Commission which coined what has become the most often quoted definition of sustainable development as development that "meets the needs of the present without compromising the ability of future generations to meet their own needs.  |

APPENDIX 1: NATIONAL AIR QUALITY INDICATOR STATIONS

| Station Name     | Province | District/ Metro          | Local Municipality       | Owner                | Classification                                | Reporting to SAAQIS | Latitude   | Longitude | Pollutants  |
|------------------|----------|--------------------------|--------------------------|----------------------|---|---------------------|------------|-----------|---|
| Saltworks        | EC       | Nelson Mandela Bay Metro | Nelson Mandela Bay Metro | COEGA                | Urban   | No                  | -33.763778 | 25.683428 |   |
| Walmer           | EC       | Nelson Mandela Bay Metro | Nelson Mandela Bay Metro | Nelson Mandela Metro | Industrial                                    | No                  | -33.985667 | 25.588083 | PM <sub>10</sub> , SO <sub>2</sub> , NO <sub>x</sub> , O <sub>3</sub> , CO  |
| Pelonomi         | FS       | Mangaung Metro           | Mangaung Metro           | Mangaung Metro       | Urban   | No                  | -29.138472 | 26.241917 | SO <sub>2</sub> , NO, NO <sub>2</sub> , NO <sub>x</sub> , CO, PM <sub>10</sub> , PM <sub>2.5</sub>  |
| Zamdela          | FS       | Fezile Dabi DM           | Metsimaholo LM           | DEA                  | Suburban (Low Income Residential Settlements) | Yes                 | -26.845083 | 27.855778 | PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> , NO <sub>x</sub> , O <sub>3</sub> , CO, Pb and BTEX                                 |
| Alexandra        | GP       | Johannesburg Metro       | Johannesburg Metro       | Joburg Metro         | Suburban (Low Income Residential Settlements) | Yes                 | -26.106972 | 28.110556 | PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub>  |
| Bedfordview      | GP       | Ekurhuleni Metro         | Ekurhuleni Metro         | Ekurhuleni Metro     | Traffic                                       | Yes                 | -26.178611 | 28.133194 | PM <sub>10</sub> , SO <sub>2</sub> , NO <sub>x</sub> , O <sub>3</sub> & CO  |
| Buccleugh        | GP       | Johannesburg Metro       | Johannesburg Metro       | Joburg Metro         | Traffic                                       | Yes                 | -26.011833 | 28.117556 | PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> , NO <sub>x</sub> , O <sub>3</sub>   |
| Diepkloof        | GP       | Johannesburg Metro       | Johannesburg Metro       | DEA                  | Urban   | Yes                 | -26.250736 | 27.956447 | PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> , NO <sub>x</sub> , O <sub>3</sub> , CO, Pb and BTEX                                 |
| Elandsfontein    | GP       | West Rand DM             | Merafong City LM         | Eskom                | Peri-Urban                                    | Yes                 | -26.245517 | 27.417522 | PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> , NO, NO <sub>2</sub> , NO <sub>x</sub> , O <sub>3</sub> , BCM, Hg, H <sub>2</sub> S |
| Etwatwa          | GP       | Ekurhuleni Metro         | Ekurhuleni Metro         | Ekurhuleni Metro     | Suburban (Low Income Residential Settlements) | No                  | -26.116611 | 28.475417 | PM <sub>10</sub> , SO <sub>2</sub> , NO <sub>x</sub> , O <sub>3</sub> & CO  |
| Germiston        | GP       | Ekurhuleni Metro         | Ekurhuleni Metro         | Ekurhuleni Metro     | Industrial                                    | No                  | -26.227361 | 28.177333 | PM <sub>10</sub> , SO <sub>2</sub> , NO <sub>x</sub> , O <sub>3</sub> & CO  |
| Olievenhoutbosch | GP       | Tshwane Metro            | Tshwane Metro            | Tshwane Metro        | Suburban (Low Income Residential Settlements) | Yes                 | -25.911611 | 28.093250 | PM <sub>10</sub> , SO <sub>2</sub> , NO <sub>x</sub> , O <sub>3</sub> & CO  |
| Olifantsfontein  | GP       | Ekurhuleni Metro         | Ekurhuleni Metro         | Ekurhuleni Metro     | Industrial                                    | No                  | -25.973123 | 28.237202 | PM <sub>10</sub> , SO <sub>2</sub> , NO <sub>x</sub> , O <sub>3</sub> & CO  |
| Rosslyn          | GP       | Tshwane Metro            | Tshwane Metro            | Tshwane Metro        | Industrial                                    | Yes                 | -25.625167 | 28.094778 | PM <sub>10</sub> , SO <sub>2</sub> , NO <sub>x</sub> , O <sub>3</sub> , CO, VOC   |
| Soshanguve       | GP       | Tshwane Metro            | Tshwane Metro            | Tshwane Metro        | Suburban (Low Income Residential Settlements) | Yes                 | -25.492000 | 28.093733 | PM <sub>10</sub> , SO <sub>2</sub> , NO <sub>x</sub> , O <sub>3</sub> & CO  |
| Springs          | GP       | Ekurhuleni Metro         | Ekurhuleni Metro         | Ekurhuleni Metro     | Urban   | No                  | -26.270361 | 28.416000 | PM <sub>10</sub> , SO <sub>2</sub> , NO <sub>x</sub> , CO   |
| Vanderbijlpark   | GP       | Sedibeng DM              | Emfuleni LM              | Sedibeng DM          | Industrial                                    | Yes                 | -26.688639 | 27.816667 | SO <sub>2</sub> , CO  |
| CBD - RBCAA      | KZN      | Uthungulu DM             | Uthungulu DM             | RBCAA                | Traffic                                       | Yes                 | -28.744700 | 32.049242 | PM <sub>10</sub> , SO <sub>2</sub>  |

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|---------------------------|-----|------------------------|-------------------------------|-----------------|---|-----|------------|-----------|---|
| City Hall - Durban        | KZN | eThekweni Metro        | Ethekewini Metro              | eThekweni Metro | Traffic                                       | Yes | -29.961160 | 30.038830 | PM <sub>10</sub> , NO <sub>x</sub>  |
| Ganges                    | KZN | eThekweni Metro        | Ethekewini Metro              | eThekweni Metro | Industrial                                    | Yes | -29.948500 | 30.964528 | PM <sub>10</sub> , SO <sub>2</sub> , NO <sub>x</sub>  |
| King Shaka                | KZN | eThekweni Metro        | Ethekewini Metro              | ACSA            | Industrial                                    | No  | -29.622972 | 31.102639 |   |
| Settlers                  | KZN | eThekweni Metro        | Ethekewini Metro              | eThekweni Metro | Urban   | Yes | -29.958750 | 30.978750 | SO <sub>2</sub>   |
| Southern Works            | KZN | eThekweni Metro        | Ethekewini Metro              | eThekweni Metro | Traffic                                       | Yes | -29.956944 | 30.973139 | PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> , NO <sub>x</sub>  |
| Lephalale                 | L   | Waterberg DM           | Lephalale LM                  | DEA             | Urban   | Yes | -23.681918 | 27.722316 | PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> , NO <sub>x</sub> , O <sub>3</sub> , CO & BTEX                                   |
| Phalaborwa                | L   | Mopani DM              | Ba-Phalaborwa LM              | L Province      | Urban   | Yes | -23.932049 | 31.139471 | SO <sub>2</sub> , NO, NO <sub>2</sub> , NO <sub>x</sub> , O <sub>3</sub> , PM <sub>10</sub> , PM <sub>2.5</sub> ,                       |
| Ermelo                    | MP  | Gert Sibande DM        | Msakaligwa LM                 | DEA             | Suburban (Low Income Residential Settlements) | Yes | -26.493361 | 29.968028 | PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> , NO <sub>x</sub> , O <sub>3</sub> , CO, Pb, Hg and BTEX                         |
| Middleburg - DEA          | MP  | Nkangala DM            | Steve Tshwete LM              | DEA             | Urban   | Yes | -25.796111 | 29.462778 | PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> , NO <sub>x</sub> , O <sub>3</sub> , CO, Pb, Hg and BTEX                         |
| Sasol Club                | MP  | Gert Sibande DM        | Govan Mbeki LM                | Sasol           | Industrial                                    | Yes | -26.550639 | 29.079028 | PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> , NO, NO <sub>2</sub> , NO <sub>x</sub> , O <sub>3</sub> , CO & H <sub>2</sub> S |
| Karoo                     | NC  | Namakwa DM             | Namakwa District Municipality | SAWS            | Suburban (Low Income Residential Settlements) | Yes | -31.398641 | 19.140214 | PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> , NO <sub>x</sub> , NO, NO <sub>2</sub> , BC and O <sub>3</sub>                  |
| Mafikeng                  | NW  | Ngaka Modiri Molema DM | Mafikeng LM                   | NW Province     | Background                                    | Yes | -25.830667 | 25.611583 | SO <sub>2</sub>   |
| Marikana Community Centre | NW  | Bojanala DM            | Rustenburg LM                 | Rustenburg LM   | Urban   | Yes | -25.698444 | 27.480111 | PM <sub>10</sub> , SO <sub>2</sub> , NO <sub>x</sub> , O <sub>3</sub> & CO  |
| Welwegund                 | NW  | Dr Kenneth Kaunda DM   | Tlokwe Local Municipality     | NW University   | Background                                    |     | -26.569444 | 26.939167 |   |
| Xanadu                    | NW  | Bojanala DM            | Madibeng LM                   | SAWS            | Background                                    | Yes | -25.747122 | 27.924610 | PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> , Nox, NO, NO <sub>2</sub> , BC and O <sub>3</sub>                               |
| Cape Point                | WC  | Cape Town Metro        | Cape Town Metro               | SAWS            | Background                                    | Yes | -34.353292 | 18.489764 | CO, NO & O <sub>3</sub>   |
| City Hall - CT            | WC  | Cape Town Metro        | Cape Town Metro               | Cape Town Metro | Traffic                                       | Yes | -33.925285 | 18.423839 | NO <sub>x</sub> , SO <sub>2</sub> & CO  |
| Foreshore                 | WC  | Cape Town Metro        | Cape Town Metro               | Cape Town Metro | Traffic                                       | Yes | -33.913833 | 18.425167 | PM <sub>10</sub> , NO <sub>x</sub> , VOC  |
| George                    | WC  | Eden DM                | George LM                     | WC Province     | Suburban (Low Income Residential Settlements) | Yes | -33.981219 | 22.473231 | PM <sub>10</sub> , SO <sub>2</sub> , NO <sub>x</sub> , O <sub>3</sub> , CO  |
| Khayelitsha - CT Metro    | WC  | Cape Town Metro        | Cape Town Metro               | Cape Town Metro | Industrial                                    | Yes | -34.015583 | 18.653556 | PM <sub>10</sub> , PM <sub>2.5</sub> , NO <sub>x</sub> , SO <sub>2</sub> , VOC  |

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|               |    |                   |                  |                 |  |     |            |           |  |
|---------------|----|-------------------|------------------|-----------------|--|-----|------------|-----------|--|
| Potsdam       | WC | Cape Town Metro   | Cape Town Metro  | Cape Town Metro | Suburban (Medium & Upper Residential Settlement) | Yes | -33.837825 | 18.524824 | VOC  |
| Somerset West | WC | Cape Town Metro   | Cape Town Metro  | Cape Town Metro | Suburban (Medium & Upper Residential Settlement) | Yes | -34.077355 | 18.831800 | SO <sub>2</sub>  |
| Table View    | WC | Cape Town Metro   | Cape Town Metro  | Cape Town Metro | Suburban (Medium & Upper Residential Settlement) | Yes | -33.819667 | 18.514333 | PM <sub>10</sub> , PM <sub>2.5</sub> , NO <sub>x</sub> , SO <sub>2</sub> , H <sub>2</sub> S, |
| Worcester     | WC | Cape Winelands DM | Breede Valley LM | WC Province     | Suburban (Medium & Upper Residential Settlement) | Yes | -33.627500 | 19.468361 | PM <sub>10</sub> , SO <sub>2</sub> , NO <sub>x</sub> , O <sub>3</sub> , CO, H <sub>2</sub> S |

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## APPENDIX 2: MUNICIPAL AIR QUALITY RATING

| Municipality              | Municipal Areas of Concern |
|---------------------------|----------------------------|
| Central Karoo             | Acceptable                 |
| Namakwa                   | Acceptable                 |
| Overberg                  | Acceptable                 |
| Pixley ka Seme            | Acceptable                 |
| Z F Mqcawu                | Acceptable                 |
| Xhariep                   | Acceptable                 |
| Ngaka Modiri Molema       | Poor                       |
| Umgungundlovu             | Poor                       |
| Alfred Nzo                | Poor                       |
| Amajuba                   | Poor                       |
| Amathole                  | Poor                       |
| Bojanala                  | Poor                       |
| Buffalo City              | Poor                       |
| Cape Winelands            | Poor                       |
| Capricorn                 | Poor                       |
| City of Cape Town         | Poor                       |
| City of Johannesburg      | Poor                       |
| City of Tshwane           | Poor                       |
| Dr Kenneth Kaunda         | Poor                       |
| Eden                      | Poor                       |
| Ehlanzeni                 | Poor                       |
| Ekurhuleni                | Poor                       |
| eThekweni                 | Poor                       |
| Fezile Dabi               | Poor                       |
| Gert Sibande              | Poor                       |
| Sekhukhune                | Poor                       |
| iLembe                    | Poor                       |
| Mangaung                  | Poor                       |
| Mopani                    | Poor                       |
| Nelson Mandela Bay        | Poor                       |
| Nkangala                  | Poor                       |
| Sedibeng                  | Poor                       |
| Ugu                       | Poor                       |
| Waterberg                 | Poor                       |
| West Coast                | Poor                       |
| West Rand                 | Poor                       |
| Cacadu                    | Potentially Poor           |
| Chris Hani                | Potentially Poor           |
| Dr Ruth Segomotsi Mompati | Potentially Poor           |
| Frances Baard             | Potentially Poor           |

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|                     |                  |
|---------------------|------------------|
| Joe Gqabi           | Potentially Poor |
| John Taolo Gaetsewe | Potentially Poor |
| Lejweleputswa       | Potentially Poor |
| O.R.Tambo           | Potentially Poor |
| Sisonke             | Potentially Poor |
| Thabo Mofutsanyane  | Potentially Poor |
| Umkhanyakude        | Potentially Poor |
| Umzinyathi          | Potentially Poor |
| Uthukela            | Potentially Poor |
| Uthungulu           | Potentially Poor |
| Vhembe              | Potentially Poor |
| Zululand            | Potentially Poor |

## APPENDIX 3: INDICATORS TO BE INCLUDED IN THE NATIONAL AQO'S ANNUAL REPORT

| PROPOSED INDICATORS FOR THE NAQO REPORT |   |                |                           |
|---|---|----------------|---------------------------|
| No.                                     | Indicator   | Baseline, 2017 | Target                    |
| 1.                                      | Problem Identification and Prioritisation   |                |                           |
| 1.2                                     | Number of Controlled Emitters declared.   | 3              | 4 (printing works)        |
| 2.                                      | Strategy development  |                |                           |
| 2.1                                     | Number of Provinces with AQMPs in place.  | 6              | 9                         |
| 2.2                                     | Number of Metropolitan Municipalities with AQMPs in place                         | 7              |                           |
| 2.3                                     | Number of District Municipalities with AQMPs in place                             | 23             |                           |
| 2.5                                     | Strategy for addressing air pollution in dense, low-income settlements published. | 1              |                           |
| 3.                                      | Standard-setting  |                |                           |
| 3.2                                     | Number of Controlled Emitters and associated standards established.               | 3              | 4 (printing works notice) |
| 4.                                      | Awareness-raising   |                |                           |
| 4.1                                     | Number of air quality related publications available.                             | 23             | 25                        |
| 5.                                      | Air Quality Impact Management   |                |                           |
| 5.1                                     | Number of Cleaner Production best practise guidelines published.                  | 3              | 4                         |
| 6.                                      | Atmospheric Emission Licensing  |                |                           |
| 6.1                                     | SNAEL SOPs and Manuals  | 0              | 1                         |
| 6.2                                     | Number of AELs issued within legislated timeframes                                | 0              | 100%                      |
| 7.                                      | Compliance Monitoring   |                |                           |



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| PROPOSED INDICATORS FOR THE NAQO REPORT |   |                |        |
|---|---|----------------|--------|
| No.                                     | Indicator   | Baseline, 2017 | Target |
| 7.1                                     | Number of government ambient air quality monitoring stations meeting minimum data requirements. | 35             | 60     |
| 7.2                                     | Number of EMLs trained in air quality compliance monitoring.                                    | 803            | 1000   |
| 8.                                      | Enforcement   |                |        |
| 8.1                                     | Number of EMLs designated   | -              | -      |
| 9.                                      | Information Management  |                |        |
| 9.1                                     | Percentage of facilities with AELs reporting to National Atmospheric Emissions Inventory System | 70%            | 90%    |
| 9.2                                     | SAAQIS upgrade – ambient air quality module and associated packages completed.                  | 1              | 1      |
| 9.3                                     | All current policy and legislation available in the SAAQIS                                      | 1              | 1      |
| 9.4                                     | Air quality scientific literature resource library.   | 1              | 1      |
| 9.5                                     | Norms and standards for air quality monitoring.   | 1              | 1      |
| 9.6                                     | All current available AQMPs.  | 1              | 1      |
| 9.9                                     | Air Quality Officer's database available on SAAQIS  | 1              | 1      |
| 9.10                                    | Key stakeholder database  | 1              | 1      |