DEPARTMENT OF ENVIRONMENTAL AFFAIRS

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(ACT NO. 107 OF 1998)

AIR QUALITY OFFSETS GUIDELINE

I, Bomo Edith Edna Molewa, Minister of Environmental Affairs, hereby publish air quality offsets guideline under section 24J (a) of the National Environmental Management Act, 1998 (Act No. 107 of 1998), set out in the Schedule hereto.

BOMO EDITH EDNA MOLEWA
MINISTER OF ENVIRONMENTAL AFFAIRS

SCHEDULE

AIR QUALITY OFFSETS GUIDELINE

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Abbreviations

AEL	Atmospheric emission license
AELA	Atmospheric emission licence authority
AQA	Air Quality Act (AQA, Act No. 39 of 2004)
AQM	Air Quality Management
CBOs	Community Based Organisations
EIA	Environmental Impact Assessment
H2S	Hydrogen sulphide
IP&WM Policy	Integrated Pollution and Waste Management policy
NAAQS	National Ambient Air Quality Standards
NAQO	National Air Quality Officer
NDP	National Development Plan
NEMA	National Environment Management Act
NGOs	Non-governmental Organisations
NPAs	National Priority Areas
PAs	Priority Areas
PM	Particulate matter
SO2	Sulphur dioxide.

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TABLE OF CONTENTS

1. INTRODUCTION 5
   1.1. Definition of Offsets 5
   1.2. Opportunities for the Atmospheric Emissions Offset Tool 6
   1.3. Purpose of the Guideline 7
2. LEGISLATIVE CONTEXT 7
   2.1. The Constitution 7
   2.2. National Environmental Management Act No. 107 of 1998 (NEMA) 8
   2.3. National Environmental Management: Air Quality Act No. 39 of 2004 (AQA) 8
3. AIR QUALITY OFFSETTING PRINCIPLES 9
4. APPLICATIONS 11
5. OFFSETS DESIGN 13
   5.1. Scope 14
   5.2. Authority Approval 14
   5.3. Implementation 15
6. PUBLIC PARTICIPATION 15
7. ROLES AND RESPONSIBILITY 15
   7.1. Applicant 15
   7.2. Licensing Authorities 15
   7.3. Communities 16
8. MONITORING, EVALUATION AND REPORTING 18
9. WITHDRAWAL 18

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1. INTRODUCTION

Enshrined in the Constitution of South Africa is the right to an environment that is not harmful to health and well-being of the people and that Government should ensure that the environment is protected through legislative and other measures. This milestone is fundamental, yet challenging given the fact that South Africa is a developing country and therefore the drive towards sustained economic growth often supersede the protection of South Africans from environmental harm in some cases. With this challenge in mind, it is envisaged that air quality offsets, if implemented appropriately, could provide an opportunity for addressing some of the current air quality management challenges within the country's present economic ambitions.

The Constitution of the Republic of South Africa, Act No. 108 of 1996 (the constitution); the National Environmental Management Act, Act No. 107 of 1998 (NEMA) and the National Environment Management: Air Quality Act, Act No. 39 of 2004 (AQA) have provisions for protection of human health from environmental harm and provisions for best practicable environmental options to be considered in environmental decision making (see section 2 of this document). Although offsets are not specifically highlighted as an option, there is evidence elsewhere that offsets can provide an option for achieving improvements in ambient air quality, thereby improving human health while promoting justifiable economic development. The promotion of social and economic development is also emphasised in the AQA (in particular section 2 (a) (iii) - the object of the Act) over and above the promotion of clean and healthy air.

The purpose of this document therefore, is to provide guidance on situations under which offsets can be applied during the implementation of the atmospheric emission licensing system stipulated in Chapter 5 of AQA. The document also provides guidance in terms of principles that should be adhered to in recommending and implementing offsets as well as the responsibilities of the different role players.

1.1. Definition of Offsets

Environmental offsets are generally defined as measures that counterbalance, counteract, or compensate for the adverse impacts of an activity on the environment. They are generally "balancing activities" carried out to counterbalance the adverse environmental impacts to achieve a "no net environmental loss" or a "net environmental benefit" outcome (Suvantola et al, 2005). All adequate offsets have common characteristics of having a clear objective.

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In the air quality context, an offset is an intervention, or interventions, specifically implemented to counterbalance the adverse and residual environmental impact of atmospheric emissions in order to deliver a net ambient air quality benefit within, but not limited to, the affected airshed where ambient air quality standards are being or have the potential to be exceeded and whereby opportunities and need for offsetting exist.

Offsets are not intended to replace regulatory and enforcement tools but are an additional tool that can be used to achieve long-term environmental protection. If implemented appropriately, air quality offsets should be capable of demonstrating air quality improvements that are real, quantifiable and verifiable.

1.2. Opportunities for the Atmospheric Emissions Offset Tool

South Africa is experiencing major social and economic changes, and at the same time facing developed and developing world challenges as a result of the impact caused by among other factors, population growth, migration and industrial development (WMO, 2012). Industrial production and product consumption demand larger inputs of energy and material, and therefore result in the generation of large amounts of waste by-products and atmospheric emissions.

The National Development Plan (NDP) 2030, which sets forth the vision for the country, prioritises economic growth as means to eliminate poverty and reduce inequality. To meet these objectives, the DNP has made the provision of sufficient energy to support industry as one of its enabling milestones. In addition, the plan has a goal of ensuring domestic security of coal supply for existing power stations through industry compact, more comprehensive coal field planning and opening up the Waterberg for coal mining. As a result of these pressing economic growth objectives, South Africa, like other developing countries, is facing a challenge of meeting these economic demands while ensuring that the environment is not compromised.

Meanwhile, some of South Africa's economic/industrial hubs, with elevated air pollution levels were declared Priority Areas (PAs) in terms of Section 18 of the Air Quality Act due to high concentrations of air pollutants, which have a potential of impacting negatively on the health of the population. The three Priority Areas declared to date are the Vaal Triangle Airshed Priority Area (VTAPA), the Highveld Priority Area (HPA) and the Waterberg-Bojanala Priority Area (WBPA). These areas, particularly the VTAPA and HPA, are characterised by industries such as coal-fired power generation, petrochemical, metallurgical, clay brick manufacturing and mining. The WBPA was declared due to the envisaged

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industrial development that threatens air quality. The control of air pollution in these areas is very challenging especially due to industrial development pressure exerted by the country's economic and social (such as unemployment) challenges. It is for this reason that tools such as offsets are required to assist in attaining required standards of environmental quality while achieving sustainable rates of economic growth. The establishment of major industries should ideally not be allowed in the PAs unless additional emissions from new plants are offset. Using the existing regulatory tools alone to attain the national ambient air quality standards cannot be effective in these areas.

Amid these economic conditions, South Africa is also characterised by dense low-income communities that rely mainly on coal and other dirty fuels for domestic cooking and heating. Consequently, findings from most of the Air Quality Assessments has indicated that in addition to the industrial emissions explained above, domestic fuel burning, veld fires, vehicle emissions, unpaved roads, and mine dumps are some of the major contributors to poor ambient air quality in these problem areas. These non-industrial emission sources are generally complex to address as the mandate to address these lie across the various departments. In this regard offset programmes may provide the opportunity to address these complex pollution sources by allowing concerted efforts by both government and polluting industries to clean up the air.

1.3. Purpose of the Guideline

The Air Quality Management Offset Guideline is aimed at providing a guide to the industry or proponents, government entities, consultants, the general public and other key stakeholders regarding appropriate principles to be adhered to in assessing the need and in designing, implementing, monitoring and evaluation of air quality offsets. The guideline provide guidance on situations under which offsets can be applied during the implementation of the atmospheric emission licensing system (stipulated in Chapter 5 of AQA); in accordance with section 39(i) of the AQA.

2. LEGISLATIVE CONTEXT

2.1. The Constitution

Chapter 2 of the Constitution states among other things, 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;*

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ii. promote conservation; and

iii. secure ecologically sustainable development and the use of natural resources while promoting justifiable economic and social development

Offsets provide one of the measures to counterbalance the negative environmental impacts that are unavoidable within reasonable boundaries, thereby promoting the necessary improvements towards an environment that is not harmful and justifiable economic and social development.

2.2. National Environmental Management Act No. 107 of 1998 (NEMA)

The NEMA creates the legal framework that gives effect to the environmental rights stipulated in Section 24 of the Constitution. It sets out the fundamental principles that apply to environmental decision making. One of the environmental principles is that, sustainable development requires the consideration of all relevant factors including that pollution and degradation of the environment are avoided, or, where they cannot be altogether avoided, are minimised and remedied. It is envisaged that offsets will provide the opportunity to remedy the impacts of pollution where it cannot be completely avoided or minimised further.

Another principle of NEMA is that the cost of remedying pollution, environmental degradation and the consequent adverse health effects and of preventing, controlling or minimising further pollution, environmental damage or adverse health effect must be paid for by those responsible for harming the environment – Polluter Pays Principle.

2.3. National Environmental Management: Air Quality Act No. 39 of 2004 (AQA)

The object of the AQA is to protect the environment by providing reasonable measures for the protection and enhancement of the quality of air in the Republic and generally to give effect to Section 24 of the Constitution 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 AQA provides for consideration of best practicable environmental options and other matters that the licensing authorities must take into account when considering an application for an atmospheric emission license. In this regard section 39(c) of the AQA stipulates that the licensing authority must take into account best practicable environmental option;

- To prevent, control abate or mitigate that pollution and

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- To protect the environment, including health, social conditions, economic conditions, cultural heritage and ambient air quality.

Section 43 (m) of the Air Quality Act stipulates that "An atmospheric emission license must specify, among other things, any other matters which are necessary for the protection or enforcement of air quality. This provision allows for the integration of offsets, as an air quality protection/improvement tool, within the licensing process.

The empowering provisions for producing guidelines for offsetting as an implementation tool to be used in the licensing process are stipulated in section 39(i) of the AQA: "When considering an application for an atmospheric emission license, the licensing authority must take into account all relevant matters including any other guideline issued by the minister or MEC relating to the performance by licensing authorities of their functions"

3. AIR QUALITY OFFSETTING PRINCIPLES

The air quality offsets must be developed and implemented in line with the Constitution, the principles of NEMA, the objectives of the AQA and the aspirations of the National Development Plan. Any authorisation in terms of AQA which set offsets as a condition should take into account not only the impacts of offsetting, but also all other measures to reduce emissions within the facility itself. This means that the offset should not be seen as a substitute for efforts that can be made to reduce emissions from a facility.

a) Outcome Based

The implementation, monitoring and evaluation of the air quality offset should be based on the outcome i.e. overall improvements in ambient air quality within the Airshed. Other positive outcomes and outputs of offsets (beyond air quality improvements) must be of secondary consideration. The applicant must be able to demonstrate the ability of the proposed offsets to improve air quality and should demonstrate ambient air quality improvements as a result of implementation of the offsets.

b) No "like for like"

The proposed offset project(s) should address pollutant(s) whose ambient concentration is/are of concern in a particular area, and not necessarily the pollutant(s) whose emission from a specific facility is/are of concern. Offsets must focus primarily on air pollutants whose ambient air quality standards are

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being exceeded or likely to be exceeded in the region. For example, a facility that emits pollutant x may implement an offsets that address pollutant y in case:

- Pollutant y concentrations exceed NAAQS in the region, and
- Pollutant x concentrations are in compliance with NAAQS

c) Transparency and Acceptability

Air Quality offsets should be based on open, fair and accountable administrations by both the applicants and the authorities. A public consultation process should be undertaken to ensure public buy-in of offset projects. Applicants of offsets must provide members of the public with any information related to the implementation of an offsets programme. They must also provide all the necessary documents that may be required by air quality officials for the approval, monitoring and evaluation of the project. On the other hand, authorities must maintain a consistent and transparent process in assessing applications that requires implementation of offsets.

In cases where the offset depends upon another party or parties (other than the applicant) for implementation, an agreement (in form of any signed documentation or contract) should be reached before the offset project can be considered acceptable.

d) Complementarity

In administering offsets, authorities should take into account not only the impacts of offsetting, but also all other measures taken and/or to be taken by the proponent to reduce emissions within the facility itself. The facility must make all the necessary efforts and reasonable measures to avoid and reduce/mitigate emissions before offsets can be considered. Offset programmes should be seen as a complementary measure to all other pollution reduction measures.

e) Sustainability

The offset projects should be based on long-term air quality improvement without impeding on other socio-economic and environmental objectives. Offsets that provides for short-term solutions should not be considered e.g. where industrial emissions are offset by reducing domestic fuel burning through the provision of alternative fuel sources. The proponent should make all efforts to ensure that communities continue to use such resources e.g. by providing them with sufficient subsidies.

f) Measurable and Scientifically Robust

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Any approved offset must have measurable air quality outcomes. No "green washing" type projects should be considered as part of an air quality offsetting programme. Offsets should represent the actual reduction of atmospheric emissions from various sources and not incomplete or inaccurate accounting of emissions. It is therefore very significant that emission sources are well understood. In order to quantify emission reduction of an offset, realistic baseline representing forecasted emission levels in the absence and in the presence of the offset project should be established. The measure of impacts on air quality, as well as the design and implementation of air quality offsets, should be based on relevant and sound science.

4. APPLICATIONS

The Air Quality Act, in its Chapter 5 outlines the licensing process for Listed Activities. Section 43 (m) in this chapter provides for the licensing authorities to include in the license any other matters which are necessary for the protection or enforcement of air quality. With the view that offsets can contribute to the protection and improvement of air quality, the licensing authorities may consider offsets during specific circumstances through the licensing process. Air quality offsets are recommended in the following circumstances:

a) During an application for postponement of compliance timeframes (Section 21) wherein the application is positively considered (in part or in full)

The National Framework for Air Quality Management in South Africa suggests that given the potential economic implications of emission standards, provisions will be made for specific industries to apply for possible extensions or postponements of compliance time frames set out in the Section 21 Notice (Listed Activities and Minimum Emissions Standards).

The applicant of a listed activity in accordance with Section 21 of AQA may apply for a postponement of the compliance date and such an application will be considered subject to a complete impact assessment with an atmospheric impact report submitted to the NAQO at least 1 year before the compliance date. Examples of conditions that may lead to an application of a postponement of S21 compliance timeframes include where:

a) There is substantial evidence suggesting that there is no available technology globally to reduce air emissions from the listed activity;

b) Confirmation provided that the plant will be decommissioned within the next 10 years; and

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c) If investment in abatement technology/techniques cannot be made due to restrictions by other national strategic and legislative requirements.

In this particular case, the offset programme shall be included as a condition for positively considered postponement applications and will therefore be a condition of a license that is issued after the postponement is granted.

b) During an application for a variation of a license

According to Section 46(1)(d) of AQA, the licensing authority may vary a license or a provisional license upon request by the license holder. If the said request will result in an increase in atmospheric emissions, Section 46(3) requires that the license holder should bring the application to the attention of the interested persons and the public. In this instance, the possible offset and their potential impacts could be considered to counter the impacts of increased emissions referred to in Section 46(3)(b).

c) During an application of an atmospheric emissions license in areas where National Ambient Air Quality Standards are being or likely to be exceeded

The Case of Priority Areas: Priority areas are areas where ambient air quality standards are exceeded or have the potential to be exceeded and the Minister or MEC has declared them priority in terms of Section 18 of the AQA. Ideally, no new polluting activities should be allowed in priority areas where exceedence of national ambient air quality standards is already a phenomenon. Where the priority area is declared on the basis of the potential for exceedences of standards, then stringent emissions standards can be applied in accordance with section 10 and 11 of AQA. However, given the economic ambitions of the country, the said stringent conditions may be difficult to implement for all projects. It is therefore recommended that where an activity (new facility) cannot be completely avoided in a priority area and stricter limits cannot be imposed, then there should be conditions for offsetting in the license, over and above the recommended emission limits. *The Case of Other non-compliant areas:* The same principle used in application of offsets in priority areas may apply for areas that that are in the alert/transitional compliant/non-compliant zones in terms of Figure 6 of the 2012 the National Framework for Air Quaiity Management in South Africa. Such areas area also known as "poor" or "potentially poor" air quality areas in terms of Table 18 of the 2012 National Framework (and as amended).

In summary, the need for an air quality offset programme will be guided by the conditions depicted in the flow cart (Figure 1) below:

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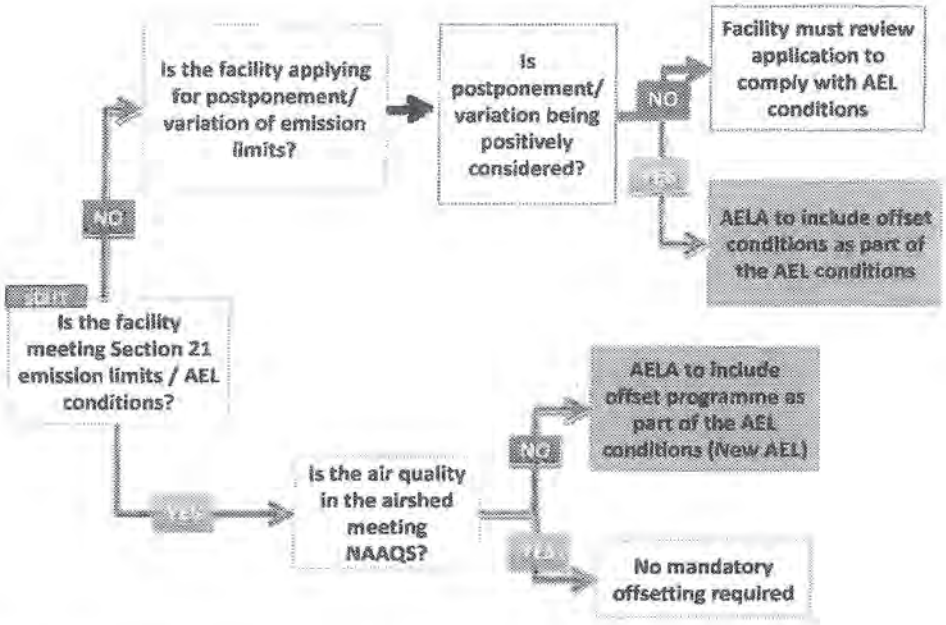

Figure 1: The conditions requiring the application of air quality offsets

In general, offsets shall be set as a condition for an AEL based on the applications described above. The inclusion of offsets during the licensing process is permitted in terms of Section 43 (m) of the Air Quality Act which stipulates that "An atmospheric emission license must specify .... any other matters which are necessary for the protection or enforcement of air quality."

Once the conditions are a requirement in the AEL, the operator of a listed activity must implement the agreed programmes within the timeframes agreed with the licensing authorities. Compliance and enforcement of offsets implementation should be integral to AEL compliance monitoring and enforcement.

5. OFFSETS DESIGN

The following considerations must be taken into account when designing an offset programme:

- Scope
- Public Participation
- Authority Approval
- Implementation
- Monitoring and evaluation

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Please note that these considerations above are not exhaustive and where necessary additional detail and information should be provided by the licensing authority. When designing an offset programme the applicant must always apply SMART principles to any offset proposed:

S – Specific

M – Measurable

A – Attainable

R – Realistic

T - Timely

5.1. Scope

The first consideration when designing an offset programme is to clearly define the scope of your project. The proponent must clearly define the geographical area where the offset will take place. It is expected that the offset will take place in the specific air-shed impacted by the emissions of the facility, as first preference, then any other area closest to the facility. Where the emissions impact across municipal or provincial boundaries, the offset interventions can take place in any of these areas.

The proponent must clearly define the **time frames** associated with offset intervention(s) – Clear indications of both permanent and temporary interventions. The proponent must indicate when the offset intervention will commence and if introduced in a phased approach, a clear timeline for completion must be presented.

The pollutant or pollutants that will be addressed by the offset project must be elaborated when defining the scope of the offset project. This should be based on the baseline emissions of the pollutant and its ambient concentrations. The emission reduction potential of the offsets must be calculated.

5.2. Authority Approval

The decision on any proposed offset shall be made by the relevant authorities depending on the nature of the application:

- The National Air Quality Officer in concurrence with the Licensing Authority in the case of postponement related applications,
- The Licensing Authority defined in terms of section 36 of the AQA in case of any other application in section 4 above.

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5.3. Implementation

The timeframes for implementation of any offset project will be agreed in writing with the relevant approval authority. Termination, amendment or suspension of any offset project may only occur with the written approval of the approval authority.

6. PUBLIC PARTICIPATION

The development of any offset programme will be subject to a detailed and transparent public participation programme. The proponent in conjunction with relevant authorities must invite all members of the public to public meeting (s) at a convenient location. As a minimum, the invitation should be placed at public places within the community. Consultation with communities can be done as part of public participation process undertaken in terms of the NEMA and and/or as a separate process.

7. ROLES AND RESPONSIBILITY

The following parties will be involved in the assessment, approval and implementation of offsets projects in terms of this guideline:

7.1. Applicant

The applicant is responsible for implementing emission reduction measures in accordance with the agreed air quality offsets including the identification, securing and managing such offsets programmes. The applicant must also demonstrate financial capability for implementing such project over a specified time. The applicant must provide progress reports on the implementation of the offset programmes over the agreed timeframes.

7.2. Licensing Authorities

The relevant licensing authorities will be responsible for assessing, evaluating, and reviewing the proposed offsets projects. Furthermore, the licensing authority(ies) will be responsible for monitoring and reviewing the implementation of the offsets within their jurisdictions. The licensing authority must draw up clear, measurable and enforceable conditions related to the offsets.

The NAQO in conjunction with the relevant licensing authorities will be responsible for assessing, evaluating, and reviewing offsets projects particularly in case of postponement applications.

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7.3. Communities

Affected communities will be granted the opportunity to participate in the various platforms, comment and suggest on the appropriate offsets project options. In line with the principle of acceptability explained above, it is important that the affected communities are consulted (and where necessary, demonstrate support) in relation the proposed offsets prior to it being adopted.

Table 1 below summarises the parties responsible for various activities based on the type of application:

Table 1: Roles and responsibilities in relation to each type of application

Applicability	Relevant Authority	Activities	Responsibility	Indicator
AEL application where facility will meet S21 limits but is in an area where NAAQS are being exceeded	**AELA**	Identifying a suitable offset project	Applicant with authorities input	AEL with an offset condition
		Public awareness – getting community buy-in	Applicant, supported by authorities	Support of offset project
		Implementation of the Offset project	Applicant	Evidence of the offset project
		Monitoring and reporting	Applicant	Ambient air quality monitoring data Offsets implementation reports
		Reviewing the offset project's sustainability	AELA	Continued uptake of offset intervention Reduction of ambient pollution

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Applicability	Relevant Authority	Activities	Responsibility	Indicator
Application for postponement to compliance timeframes of S21 Notice	**NAQO in concurrence with AELA**	Identifying a suitable offset project	Applicant in concurrence with the Authorities	Postponement granted with an offset project as a condition
		Public awareness – getting community buy-in	Applicant, supported by authorities	Acceptance of offset project
		Implementation of the Offset project	Applicant	Evidence of the offset project
		Monitoring and reporting	Applicant	Ambient air quality monitoring data Offsets implementation reports
		Reviewing the offset project's sustainability	NAQO and AELA	Continued uptake of offset intervention Reduction of ambient pollution
Application of a variation of an AEL	**AELA**	Identifying a suitable offset project	AELA in concurrence with the applicant	Variation granted with an offset project as a condition
		Public awareness – getting community buy-in	Applicant supported by authorities	Acceptance of offset project
		Implementation of the Offset project	Applicant	Evidence of the offset project
		Monitoring and reporting	Applicant	Ambient air quality monitoring data

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Applicability	Relevant Authority	Activities	Responsibility	Indicator
		Reviewing the offset project's sustainability	AELA	Continued uptake of offset intervention Reduction of ambient pollution

8. MONITORING, EVALUATION AND REPORTING

The relevant authorities that have made a requirement for offsets as part of various authorisations in section 4 shall be responsible for enforcing and evaluation of the implementation of offsets. A person implementing an offset project must report progress on the implementation of the offsets to the relevant authority. The reporting must be in relation to the specific targets and timeframes asset out in the offset programme and in the licence. The report, coupled with targeted site inspections, should form the basis for the evaluation by the authorities. The reporting must be aligned with AEL reporting.

The proponent shall ensure that ambient air quality is monitored within the area where an offset will be implemented in order to ensure that principle (a) in section 3 of this document is adhered to. The adequacy of the location of monitoring points shall be agreed upon with the relevant authority and monitoring shall be done in line with the Norms and Standards for Air Quality Monitoring.

9. WITHDRAWAL

Any authorisation granted with a condition for offsetting may be revised/withdrawn at any time by the relevant authority should proponent of the offset project fails to deliver on any of the agreed offset interventions. The proponent must be afforded the opportunity within reasonable time and measures to address perceived failures and recommend alternative solutions.

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