

STATUS AND IMPACT OF AIR POLLUTION IN THE COUNTRY

PRESENTATION TO THE ENVIRONMENT, AGRICULTURE AND RURAL
DEVELOPMENT PORTFOLIO COMMITTEE AT THE GAUTENG PROVINCIAL
LEGISLATURE

POLLUTION SUMMIT THEMED “RESTORING AIR, WATER AND
ENVIRONMENTAL INTEGRITY IN GAUTENG: FROM OVERSIGHT TO ACTION

19-20 SEPTEMBER 2026

EMPERORS PALACE CONFERENCE CENTRE, EKURHULENI MUNICIPALITY



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OUTLINE OF PRESENTATION

The presentation provides a national overview of the implementation of the National Environmental Management: Air Quality Act, 2004 (NEMAQA), with a focus on the following key areas:

- Regulatory framework
- Air Quality Management (AQM) Functions
- Status of NEMAQA Implementation
- Successes and Challenges
- Looking Ahead

NATIONAL ENVIRONMENTAL MANAGEMENT: AIR QUALITY ACT 39 OF 2004

- The National Environmental Management: Air Quality Act 39 of 2004 (NEMAQA) is underpinned by Section 24 of the Bill of Rights contained in the Constitution of South Africa, 1996, which provides for everyone's right to an environment that is not harmful to their health or well-being and to an environment protected for the benefit of present and future generations through reasonable legislative and other measures.
- NEMAQA seeks to reform the law regulating air quality by:
 - ✓ providing reasonable measures for the prevention of pollution and ecological degradation;
 - ✓ securing ecologically sustainable development while promoting justifiable economic and social development; and
 - ✓ providing for national norms and standards regulating air quality monitoring, management and control by all spheres of government.

AIR QUALITY MANAGEMENT GOVERNANCE FUNCTIONS

- Air quality management functions are concurrent and can be described by a governance cycle
- The cycle provides for continuous improvement as well as horizontal and vertical integration across the three sphere of government
- Four critical functions facing challenges are highlighted

**1. Coordination and
Cooperative
Governance**

**2. Legislation Development
and Planning**

**3. Atmospheric Emission
Authorisation and
Management**

**4. Monitoring & Evaluation,
Information Management
and Communication**

NEMAQA LEGISLATIVE TOOLS

- Regulations
 - Atmospheric impact reporting
 - Air dispersion modelling
 - National Dust Control Regulations
 - AEL Fee Calculator
 - National Emissions Inventory System Regulations for reporting
 - Regulations for enforcing Priority Area plans
 - Air Quality Officer Powers and Functions
- National Standards
 - National Ambient Air Quality Standards 2009 & 2012 – under review
 - Priority pollutants – under development
 - Noise and odour regulations – under development
- Notices
 - Listed Activities and Minimum Emission Standards, 2011, 2013 and 2018, 2026 (under consultation)
 - Temporary asphalt plants
 - Small scale charcoal plants
 - Small boilers below 50MW
- Other NEMAQA tools
 - National Framework 2007, 2012, 2017 and 2025
 - Model Bylaws for Air Quality Management
 - Over 60 municipal by-laws
 - Air Quality Management Plans

COOPERATIVE GOVERNANCE AND SECTOR COORDINATION

- Air quality management functions are decentralizing responsibilities – concurrent functions across the three sphere of government.
- Intergovernmental coordination through the National-Provincial Air Quality Officers Forum – Mintech WG2.
- Provincial Air Quality Officers Forums (all provinces).
- Air Quality Governance Lekgotla held annually during September.
- Annual Priority Area Summit.
- Every jurisdiction must designate an Air Quality Officer
 - Provinces – 100% (9 out of 9 provinces)
 - Metro – 100% (8 out of 8 metros)
 - Districts – 84% (37 of 44 districts)
 - Local – 11% (23 out of 205)

OUTREACH AND AWARENESS PROGRAMS

- Programs to raise awareness and capacity building on air quality management to various audiences at different levels.
- Learner and Teachers Educations.
- Learner Material Development, Printing and Circulation.
- Community Engagements and Outreach.
- Governance and Institutional Strengthening.
- International Day of Clean Air.

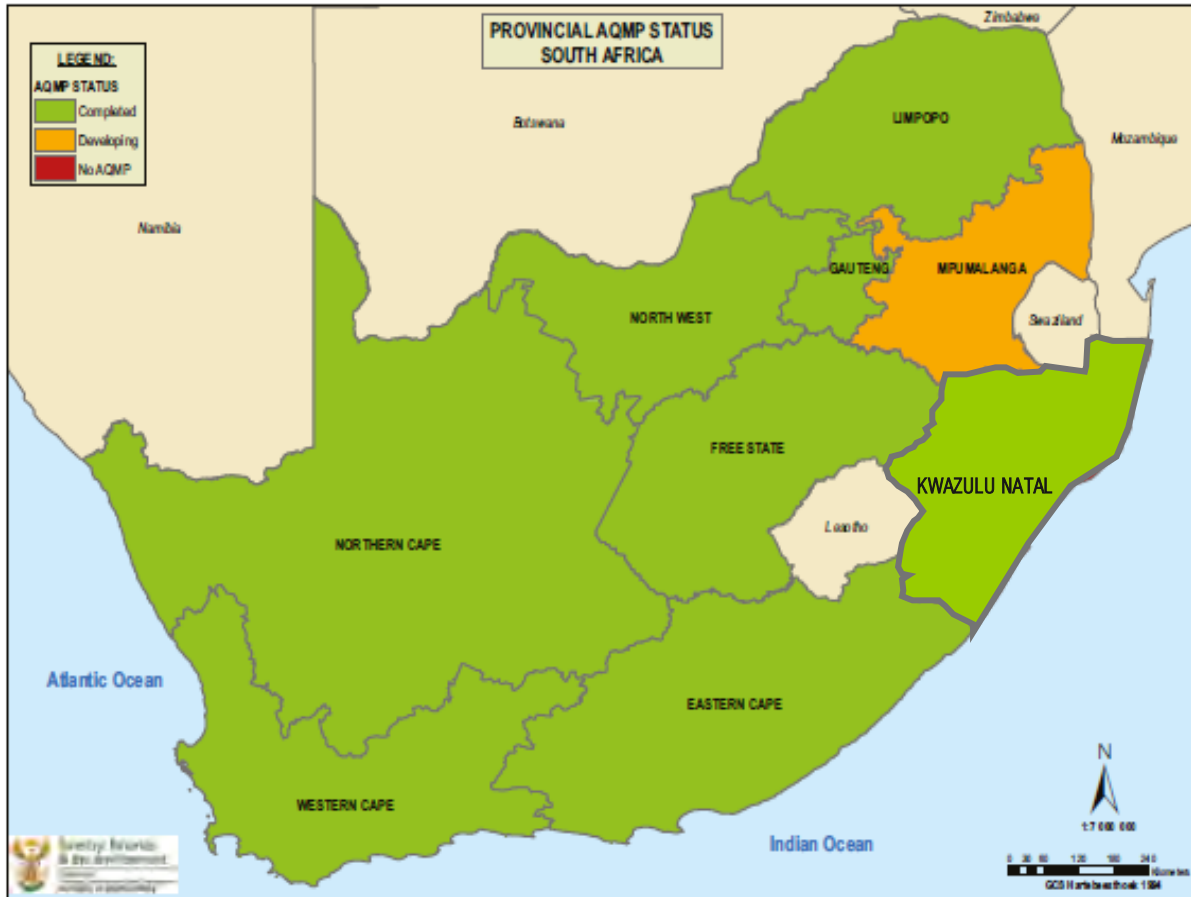


AIR QUALITY MANAGEMENT PLANNING

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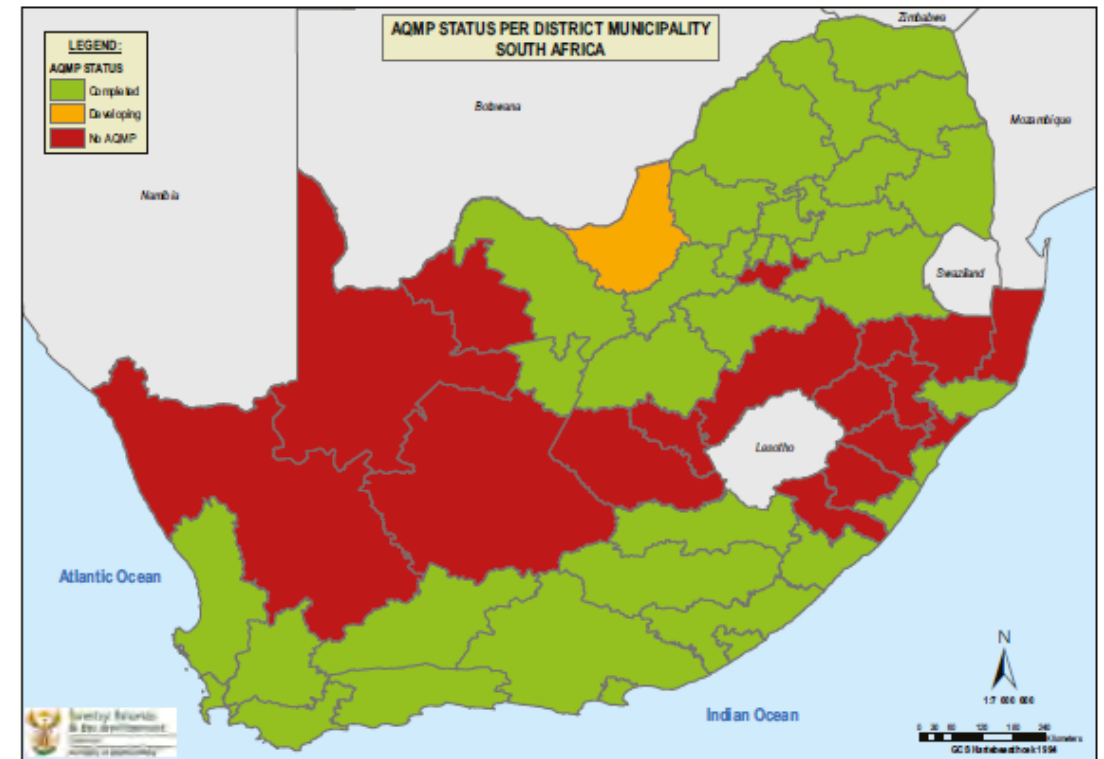
- Provinces and national departments must establish and implement air quality management plans (AQMPs) as part of Environmental Management Plans
- Municipalities must do the same and include their AQMPs in their Integrated Development Plans (IDPs)
- An AQMP must include:
 - Strategies/interventions/targets for air quality improvements
 - Resources requirements to implement
 - Capacity building requirements
 - Outreach and awareness programs

AIR QUALITY MANAGEMENT PLANNING...CONT...



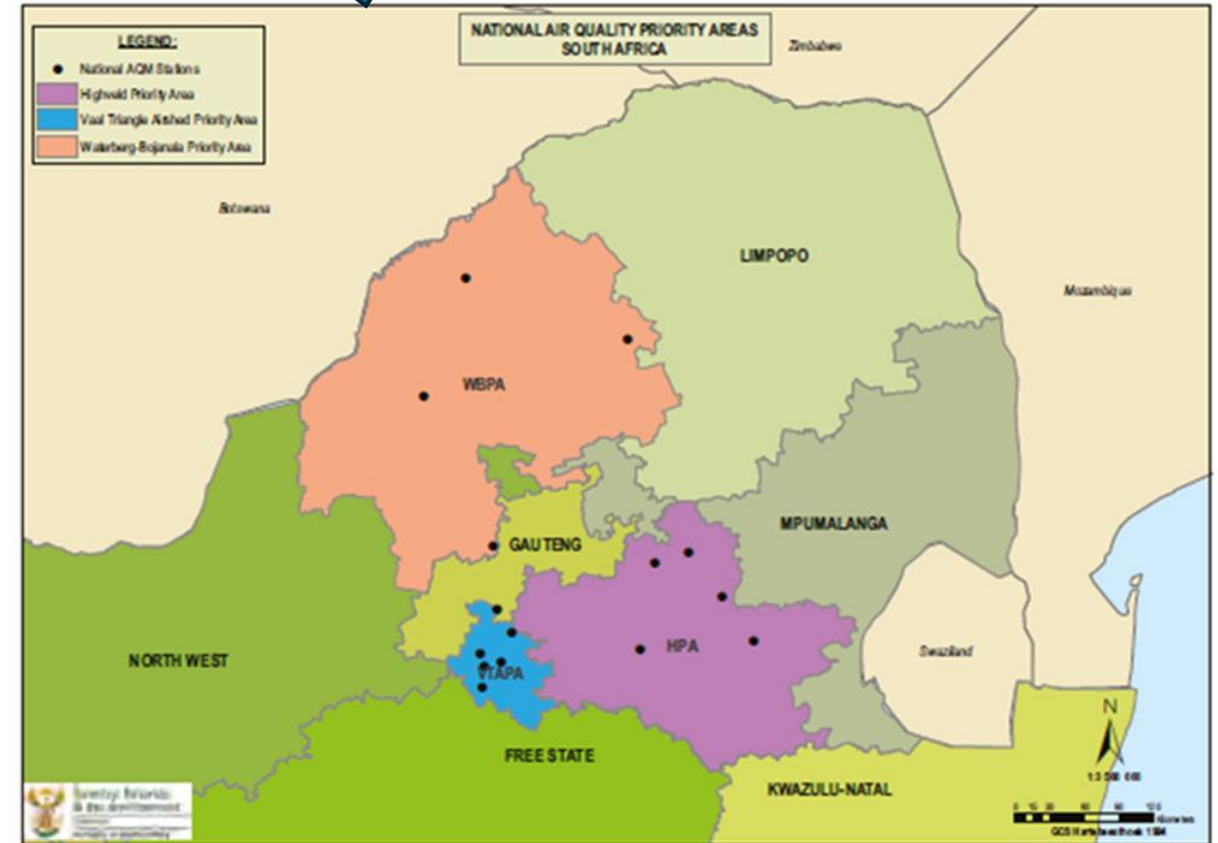
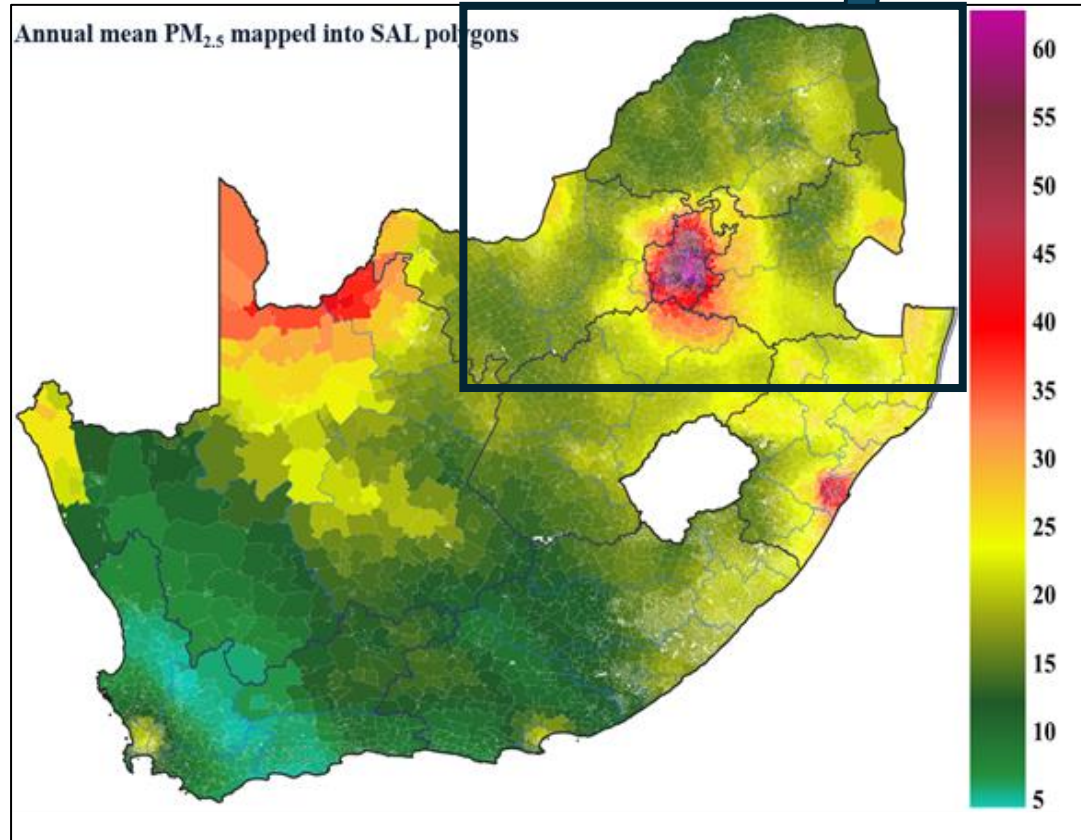
AQMPs provides a blue-print for air pollution management and resourcing

- 8 of 9 provinces have AQMPs (89%)
- 7 of 8 metros have AQMPs (87%)



AIR QUALITY MANAGEMENT - PRIORITY AREAS

Annual average PM_{2.5}



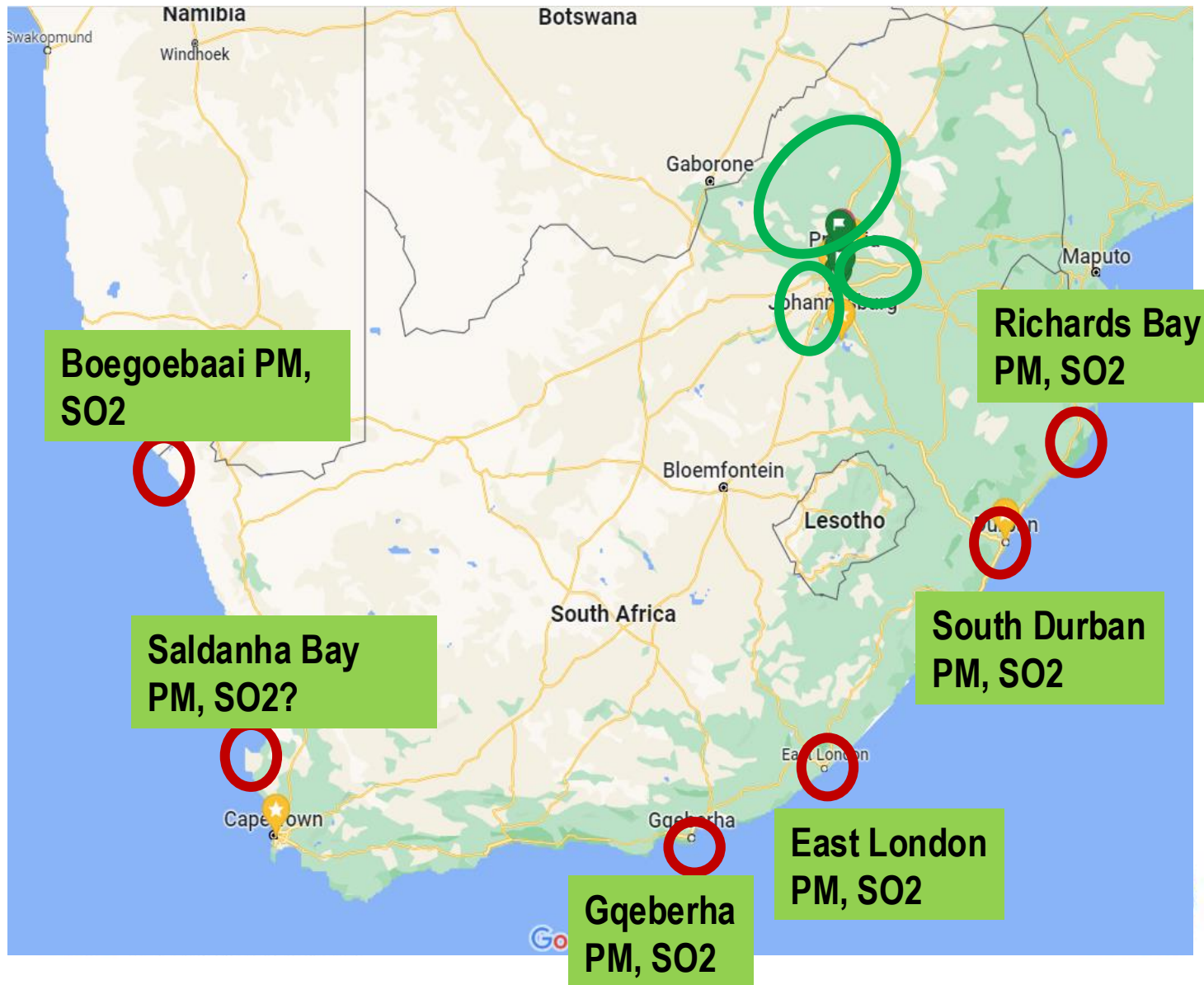
THREE NATIONAL PRIORITY AREAS

- **Vaal Triangle Airshed Priority Area (VTAPA):** Declared in 2006, this region covers parts of Gauteng and the Free State (including Sedibeng and Fezile Dabi) due to dense clustering of heavy industry, mining, and residential fuel burning – now includes all of CoJ
- **Highveld Priority Area (HPA):** Declared in 2007, it spans parts of Mpumalanga and Gauteng (including Gert Sibande and Nkangala), heavily impacted by coal-fired power stations, petrochemical plants, and metallurgical industries – to include City of Tshwane shortly
- **Waterberg-Bojanala Priority Area (WBPA):** Declared in 2015, this area covers parts of Limpopo and the North West Province (including Waterberg and Bojanala Platinum), driven by extensive platinum group metal mining, chrome smelting, and coal mining.

NATIONAL PRIORITY AREAS IMPLEMENTATION

- Priority area tool to manage cross-provincial air pollution hotspots.
- Intergovernmental coordination and implementation structures
 - ✓ Multi-stakeholders Reference Groups (3) and Implementation Task Teams (10 teams)
- **Priority areas regulations provides mechanisms for compliance and enforcement of priority areas plans.**
- Targeted emission reductions to drive plans implementation.
- **Risks of litigation by major polluters.**

CLEAN AIR PORTS PROGRAM



- There are coastal areas of concerns that require increased attention and municipal support – limited capacity
- All areas are designated Industrial Development Zones (IDZs) and will continue to develop
- Increased port activities (from shipping, material handling and manufacturing)
- Establish a structured approach to management air pollution in these areas – **Clean Air Ports Program**
- Reduce risks of operating business as usual in areas that continuously raise public concerns/complaints

ATMOSPHERIC EMISSION AUTHORISATION, COMPLIANCE MONITORING AND ENFORCEMENT

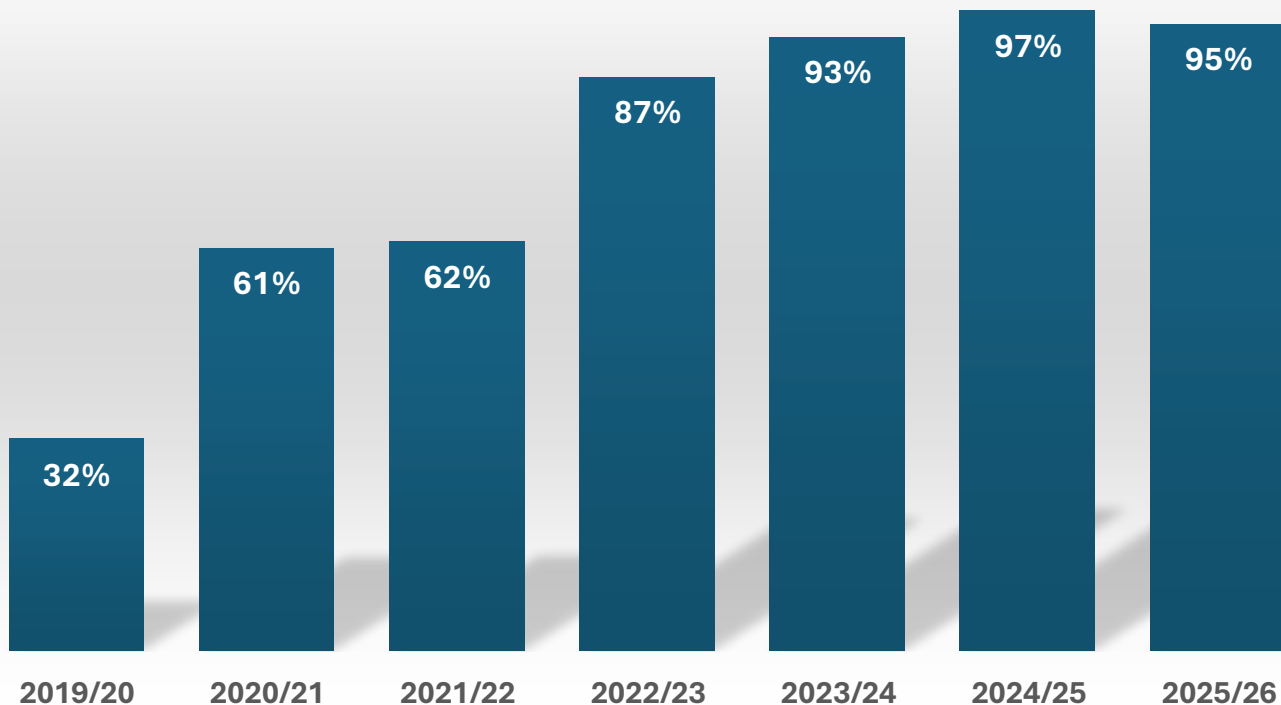
MANAGEMENT OF INDUSTRIAL EMISSIONS

- Activities which result in significant atmospheric emissions require a licence to operate – industrial and power generation >1400 Atmospheric Emission Licences (AELs).
- National department, provinces and metropolitan/district municipalities are the authorities, in charge of issuing, monitoring and managing licenses.
- Respective jurisdictions are also responsible for compliance monitoring and enforcement by Environmental Management Inspectors (EMIs).
- Smaller sources of pollution require approval and registration to operate.



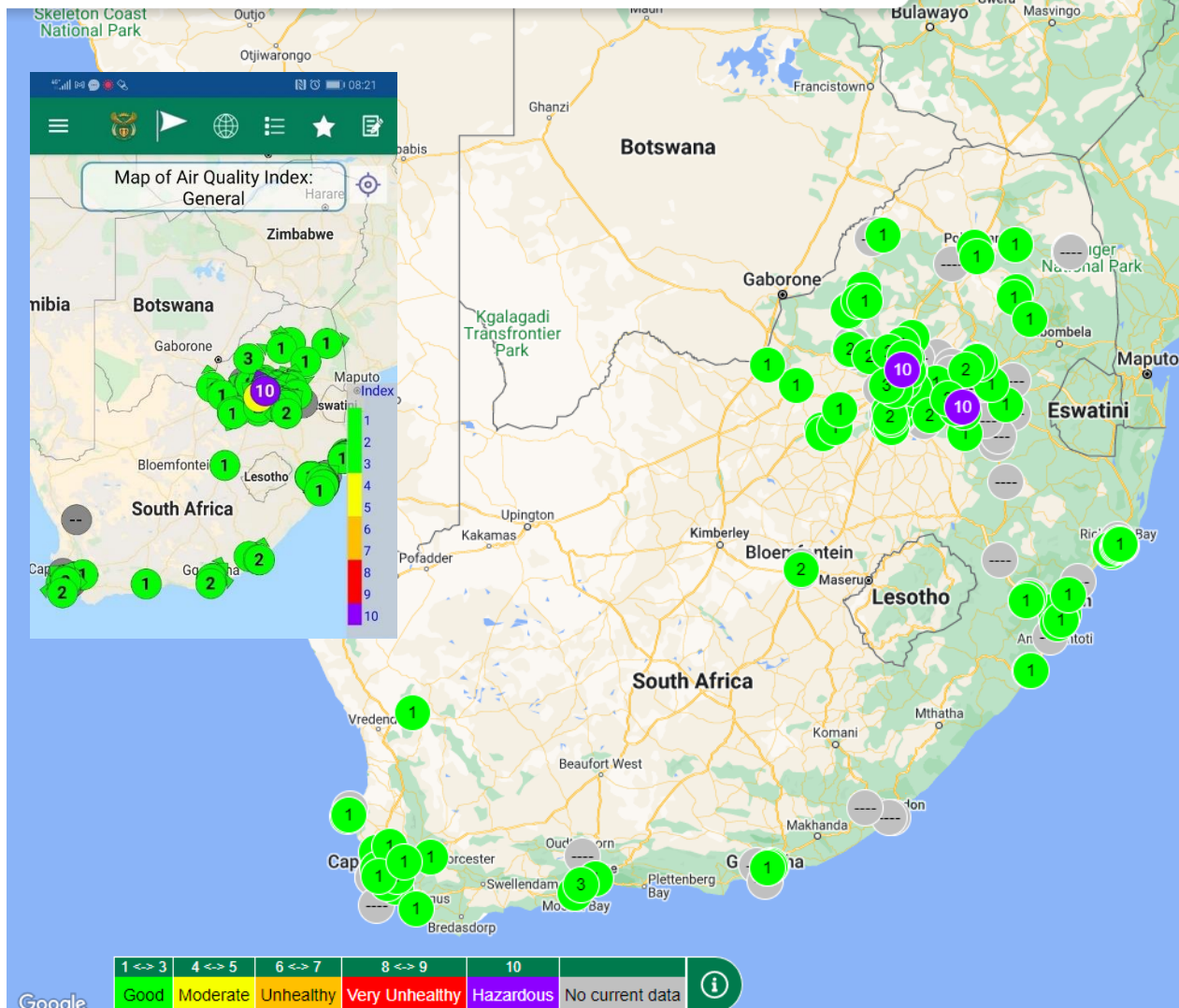
ATMOSPHERIC EMISSIONS LICENSING MANAGEMENT

AEL Annual Performance



- Over 1400 licenses issued nationwide.
- Increased national performance from **32%** in 2019/20 to **97%**.
- Special Cabinet decision implemented from 2022 uplifted the sector performance.
- Continuous training and support to ensure AELs are issued in legislated timeframes by municipalities.
- Despite loss of online system, effective implementation of function has continued offline.
- More efforts and capacity in monitoring licenses compliance and undertaking necessary enforcement actions – especially in priority areas
- Resources and EMI designations.

AIR QUALITY MONITORING AND INFORMATION DISSEMINATION



NATIONAL AMBIENT AIR QUALITY MONITORING NETWORK (NAAQMN)

- To meet regulatory requirements, government (national, South African Weather Services - SAWS, provinces and municipalities) has invested greatly in commissioning air quality monitoring infrastructure.
- Currently, there are 135 government owned stations across the country.
- Each station costs between R2 million to R4 million (over R0.5 billion in infrastructure investment).
- Over 70 private stations complement the network
- Information is disseminated via the South African Air Quality Information System (SAAQIS)

LOW-COST SENSORS



TRADITIONAL MONITORING STATION



PROVINCIAL SUMMARY OF MONITORING STATIONS: APRIL – JUNE 2026

Province	No. of stations	Stations Meeting Data Requirements	Stations Not Meeting Data Requirements	Stations Not Operational
Eastern Cape	8	0	2	6
Free State	3	0	0	3
Gauteng	31	7	12	12
KZN	25	12	2	11
Limpopo	8	4	4	0
Mpumalanga	7	2	4	1
North-West	10	0	6	4
SAWS	17	8	5	4
Western Cape	26	14	10	2
National Total	135	47	45	43

INTERVENTIONS IN MONITORING INFRASTRUCTURE

- Instrument recapitalization – replacing aging infrastructure.
- Establishment of the transversal contract for air quality monitoring (RT37-2024) – to streamline procurement process.
- Investing in power backup solutions – to address stations power disruptions.
- Partnering with private sector to improve monitoring coverage – 60 stations reporting to the SAAQIS
- Introduction of sensors to complement existing reference monitoring and improving national coverage.

SENSOR MONITORING INITIATIVES

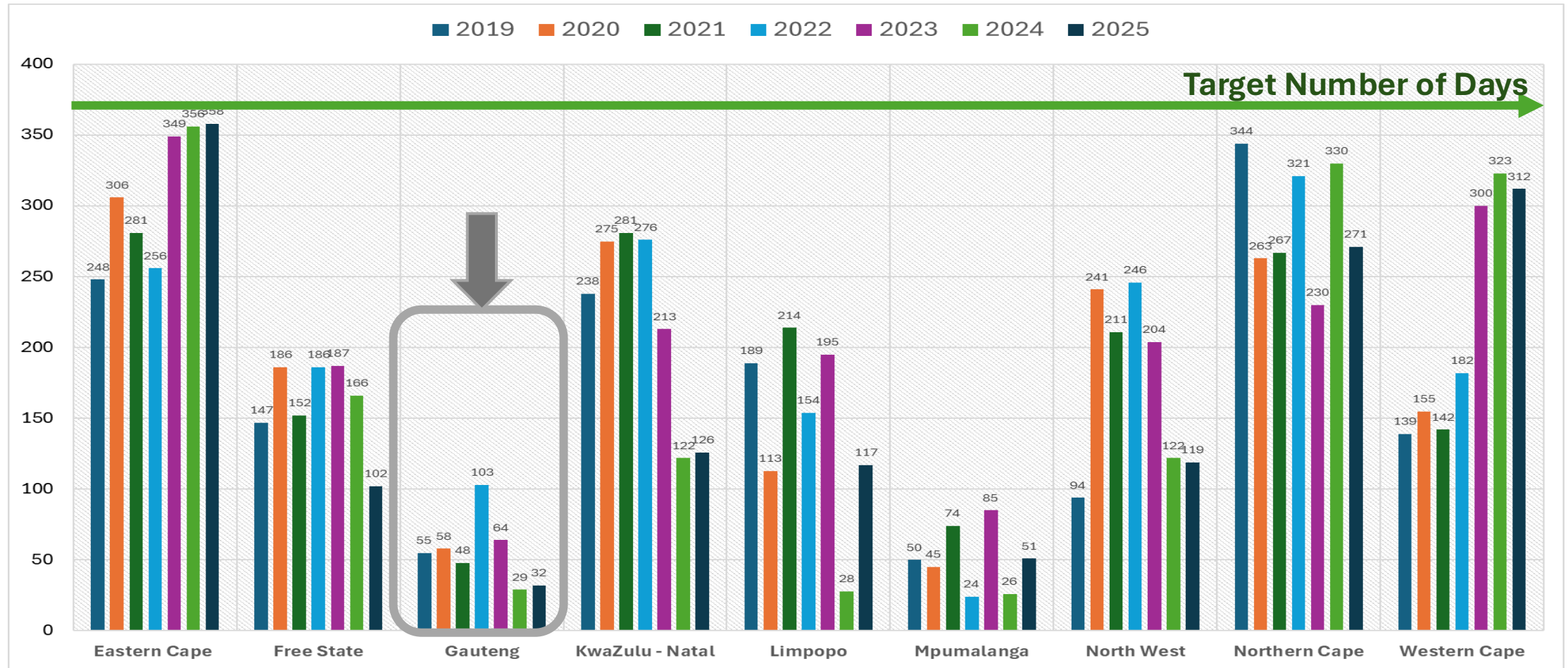


Government is rolling out sensor monitoring

- New monitoring technology gaining popularity of use globally
- Portable, compact and affordable air quality monitoring technologies that can be deployed in practical timeframes in order to speedily supplement the NAAQMN and address some of the immediate challenges
- Provide real-time measurements at lower cost - cheap to commission and operate
- Easy to operate – no need for skilled operators to manage and calibrate
- Operate with limited human intervention for long periods
- Easily secured – reducing risks of vandalism/theft
- Can be powered by solar – reducing electricity challenges
- Versatile measurement matrix – multiple pollutants SO₂, NO_x, PM, CO, VOCs and meteorological parameters

STATE OF AIR QUALITY ACROSS THE COUNTRY AND IMPACTS

STATE OF AIR QUALITY – PROVINCIAL INDICATOR

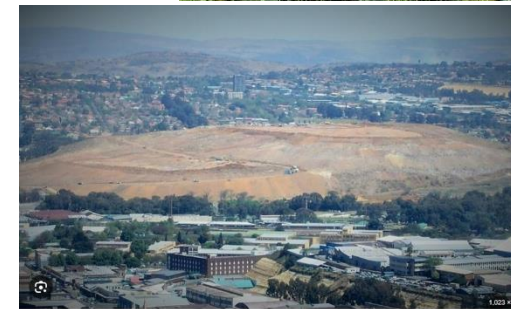


STATE OF AIR QUALITY – PROVINCIAL INDICATOR...CONT...

- Gauteng, Mpumalanga, Limpopo, North-West, and Free State experience significant non-compliance with National Ambient Air Quality Standards.
- The trends influenced mostly by dust/particulate matter.
- Trends emphasises why these provinces were declared priority areas.
- Significant interventions are needed to enforce legislation, hold polluters accountable and improve service delivery.
- Municipalities require support to improve compliance monitoring and enforcement.

AREAS REQUIRING URGENT INTERVENTIONS IN GAUTENG

- Industrial sources, particularly in Sedibeng and Ekurhuleni.
- Waste Management – landfills and illegal waste/tyre burning.
- Mine dumps especially in City of Johannesburg and West Rand – National Dust Control Regulations
- Regional Transport Strategy.
- Addressing open burning/veld fires – in collaboration with Fire Protection Associations – especially during dry season.
- Optimising the province air quality monitoring network - redesign against resources.



SOCIO-ECONOMIC IMPACTS OF AIR POLLUTION

Air pollution is the leading environmental risk in the country. Several studies have qualified air pollution costs in the country primarily through healthcare costs, lost productivity, and environmental damage:

- Premature death due to air pollution is estimated at between 25800 to 42000 deaths annually
- Costs of air pollution are estimated at between 2.2% to 14% of GDP (up to US\$1 trillion)
- Children, pregnant women, the elderly, and those with pre-existing health conditions are more susceptible to harm – environmental justice
- Without intervention, the magnitude of the problem is expected to increase alongside growing economic activity, populations, and urbanization

However, it is estimated that cost-benefits of pollution mitigation provide returns of up to \$15 per \$1 spent.

SECTOR INVENTIONS AND FUTURE PLANS

Area of Concern	Proposed Interventions/Activities
Political, Financial and Administrative	• Advocate for the strengthening of AQM functions and resourcing through coordinated engagement with the South African Local Government Association, Department of Cooperative Governance and Traditional Affairs and National Treasury. • 7th Administration GNU priorities - leveraging co-benefits from the low-carbon/green economy, promoting cost-optimized mitigation and air quality management measures – benefit from funding the mechanisms. • Strengthen the designation of Air Quality Officers and EMIs.
Technical Capacity of State	• Strengthen technical support to local government for effective implementation of NEMAQA, including the development and enforcement of air quality by-laws and effective AQMPs, with AQMPs priorities integrated into IDPs • Strengthen coordinated compliance monitoring and enforcement to ensure that polluters reduce emissions, including effective monitoring of AELs, regulations and by-laws. • Enhance SAWS support (pending funding). • Improving research, technical support, funding and collaboration.

SECTOR INVENTIONS AND FUTURE PLANS...CONT...

Area of Concern	Proposed Interventions/Activities
Legislative Enhancements (Command and Control)	- Identify continuous improvements and technology advancements - Phasing out of old technologies for example, clamp kilns in brick manufacturing
Coordination and Cooperative Governance	- Improving cooperative governance as air pollution sources span across multiple mandates (waste, forestry, agriculture, energy, transport, health, human settlements, climate change, mining) - Streamline air quality management in other policies and interventions
Education and Community Engagements	- Intensifying awareness campaigns to reduce pollution from behavior change - Regular dissemination of air quality information and progress reporting - Interacting with communities and schools on continuous basis by all districts and their municipalities - Partnering with industries in community related programs

CONCLUDING REMARKS – AIR QUALITY MANAGEMENT

- Air quality management is a constitutional and statutory function that is critical to protecting public health and upholding environmental rights
- The function is supported by a well-developed legislative and regulatory framework, providing clear mandates, obligations, norms and standards across the three spheres of government.
- However, air quality remains largely underfunded, with no dedicated allocation within the Equitable Share formula despite significant compliance, monitoring, licensing, and reporting obligations
- The current funding model does not adequately reflect the actual cost of delivering air quality management services, particularly in pollution hotspots and priority areas
- Effective implementation requires prioritisation, sustained long-term commitment and adequate human, financial and political resources, particularly at municipal level.
- Strengthening government capacity is essential to enforce legislation, hold polluters accountable and improve air quality service delivery.

Thank You!
Ngiyabonga!
Ndiyabulela!
Dankie!
Ndi a livhuwa!
Ke a leboga!
Ke a laboha!
Ndzi khense ngopfu!

thank you



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