

PROMISES: All gone up in smoke

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NOZIPHO Nxumalo lifts up the tattered, dusty sheet of plastic covering her family's few prized possessions - an old-fashioned TV set and obsolete-looking hi-fi. The plastic, like the permanently shut windows, is an attempt to stop the black dust from getting inside her small, modest home on the outskirts of eMalahleni (Witbank).

But it's futile: the dust coats everything.

"Look at our white curtains, how black they are," says the unemployed Nxumalo, frustrated.

She dirties her fingers running them on a windowsill covered in dark dust. "It doesn't matter how much you keep cleaning; the dust still comes in. It's in our bodies too. When we blow our noses, it's black."

Nxumalo lives with her extended family in the settlement of Masakhane, dwarfed by Eskom's towering Duvha coal-fired power plant, located a kilometre or so away, and surrounded by rows of electricity pylons.

Just outside their front door, a mountainous coal heap rises ever higher in the quest for black gold.

Environmental activists say that by constantly inhaling polluted air, impoverished families like the Nxumalos, who don't have access to electricity, pay a heavy price for South Africa's "coal addiction", particularly here on the pollution-battered Mpumalanga Highveld.

"Many people in this area are sick, coughing and have asthma," says Nxumalo. "The mobile clinic only comes once a month and the queues are so long."

It wasn't supposed to turn out this way. In November 2007, the Department of Environmental Affairs (DEA) - heeding to demands made by civil society - vowed to clean up air quality in the heavily polluted region by declaring the Highveld, then home to about 3.6 million people, the country's second air quality priority area.

The vast Highveld Priority Area, in terms of the National Environmental Management: Air Quality Act, spans 31 000km², including Ekurhuleni in Gauteng and three district and nine local municipalities in Mpumalanga.

At the time, then Minister of Environmental Affairs Marthinus van Schalkwyk described how a "situation exists within the Highveld Priority Area which is causing or may cause a significant negative impact on air quality".

The area required specific air quality management action to "rectify the situation".

Yet more than a decade later, the region's residents are still breathing dirty, dangerous air, according to a new report by the Centre for Environmental Rights (CER), together with environmental justice organisation groundWork and the Highveld Environmental Justice Network.

"The environmental injustice remains: toxic air pollution continues to destroy the health and well-being of the people of the Highveld," says the report, "Broken Promises: The Failure of the Highveld Priority Area," gleaned from the government's own reports and expert analysis of data.

To be unveiled on Monday when the DEA hosts its air quality governance lekgotla in Woodmead, the report details how people living on the Highveld Priority Area are "angry and frustrated" by the government's failure to protect them from the "devastating" impacts of pollution.

Consider that 12 of Eskom's 15 coal-fired electricity stations operate on the Highveld, an industrial heartland in South Africa. Then there's Sasol's giant refinery in Secunda, an assortment of metal smelters; hundreds of coal mines; brick and stone works; fertiliser and chemical producers; explosive producers; charcoal producers and other small additional industrial operations.

But even after 2007's declaration, it would still take more than four years for an air quality management plan to be published for the area in 2012.

This plan set specific objectives committing the DEA, provincial authorities in Mpumalanga and Gauteng and affected municipalities, to begin tackling air quality problems.

Yet the DEA's own draft review of this plan, which was published for comment in February this year, "makes clear that despite some 10 years since the declaration, aggregate emissions have not decreased significantly, if at all, over this period" and a credible method of monitoring, tracking and reporting air pollutant emissions has not been developed, says the CER.

The draft review notes how "measured ambient data does not indicate any significant improvement in air quality since the gazetting of the air quality management plan on the Highveld.

"These data also indicate significant exceedances of the National Ambient Air Quality Standards (NAAQS)."

The Highveld Priority Area, says the CER, "has, to date, failed dismally in its purpose: to improve air quality so that it at least meets the NAAQS.

"Pollution is not being adequately monitored or reduced, and polluters are not being held accountable."

In 2015, the DEA controversially granted Eskom and Sasol, the area's biggest polluters, postponements from their compliance with minimum air quality standards.

Sasol is again seeking to postpone a 2020 deadline to meet minimum emission standards, promulgated in line with the Air Quality Act, particularly for sulphur dioxide and hydrogen sulphide.

That led to criticism earlier this year from Philemon Mapulane, the chairperson of the portfolio committee on environmental affairs, who stated that as a technical engineering company, Sasol "should lead the way in pollution abatement innovation and technology, rather than look for cheap ways that might compromise human lives".

This was considering Sasol's operations are situated in air pollution hotspots "where emissions expose individuals to increased negative health effects".

Sasol says most of its process emissions will comply with the future minimum emission standards, but "there are some that cannot meet the standards within the required time frames".

The report says the decision to grant postponements to Eskom and Sasol in 2015 "has made it significantly more difficult for air pollution on the Highveld to be reduced".

There is a dearth of compliance monitoring and enforcement "partially because of wholly-inadequate resources, both in terms of money and people, to do what it is required to: monitor pollution and hold polluters accountable for failures to comply with air emission licences," says attorney Robyn Hugo, the CER's programme head for pollution and climate change.

As the number of mines and industries soar, it's inevitable that without a comprehensive compliance monitoring and enforcement programme, "air pollution - and its attendant health impacts - will get worse," she warns.

These impacts are already alarming. A study commissioned by groundWork, and presented to Parliament's portfolio committee earlier this month, detailed how air pollution from Eskom's coal-fired power stations kills more than 2 200 South Africans every year, causes thousands of cases of bronchitis and asthma in adults and children annually, and costs the country R30 billion a year.

An enormous body of scientific literature, says the author, Dr Mike Holland, a UK air quality and health expert, shows the association between air pollution of the type generated by coal mines and coal burning, especially fine particles, on health.

"Much of this has focused on mortality and hospital admissions for respiratory and cardiovascular illness. Increasingly, researchers are looking at other effects (low birth weight, diabetes, obesity, bronchitis) and also finding associations."

Holland points out that in regions such as Dublin and Hong Kong, where coal bans have been introduced "studies have subsequently shown an improvement in health".

He adds that air pollution has to be seen as acting alongside other stress agents such as infectious disease, smoking, lack of exercise and poor diet, for example.

"Hence saying that 'person X died of air pollution' would go beyond what we know. However, this does not detract from the fact that we know that air pollution leads to illness and premature death."

It's the poor who bear the brunt, says Hugo. "Those most impacted by the pollution are also those least financially able to take action to hold government and polluters liable for these failures: the height of environmental injustice."

"But residents of these polluted areas have had enough: they are angry and have now set out the minimum steps they require government to take to protect constitutional environmental rights."

Bobby Peek, groundWork director, says while the report is focused "on one piece of air quality governance in one geographic area, we need to recognise that this reality is lived by many throughout the country, around Eskom coal-fired power stations and next to coal mines."

"They promised clean air 10 year ago and we don't have it."

Hugo agrees, explaining the same failures on the Highveld unfold in South Africa's other two air priority areas - the Vaal Triangle and the Waterberg-Bojanala. "The majority of the demands we make apply equally to the other two and there is non-compliance with air quality standards in both."

"This is particularly the case in the Vaal Triangle, declared as the first priority area 11 years ago. There's an enormous amount of polluting development, including coal

mines and coal-fired power stations, planned for the third priority area - the water-scarce Waterberg-Bojanala.”

The DEA and other authorities must urgently take meaningful action to protect Constitutional rights, says Hugo. “We will consider all legal options available to us if these steps are not taken - which would include litigation.”

Earlier this month, Eskom told the committee it is “doing its utmost” to comply with the minimum emission standards and that upgrades at its power stations have resulted in a 30% reduction in relative particulate emissions over the past two years.

Back on her bleak settlement on the Highveld, Nxumalo relates how she has to manoeuvre her washing to avoid being shocked when she hangs it up on the metal line.

She shows the family’s store of water in 25 containers - they have to buy water - blackened by dust.

“The water tastes strange but what can we do? We were told we’d be moved, but we’re still here. I’d leave today if I could.”

THE AIR WE BREATHE

TINY toxic particles of air pollution are “inescapable when present in the air we breathe.

“The association between air pollution and deaths has been established internationally by the World Health Organisation,” says the Centre for Environmental Rights’ Broken Promises report.

Air pollution is made up of a cocktail of toxic gases and combustion particles. “These tiny particles are made up of a complex mixture of carcinogens, sulphates, nitrates and toxic metals like arsenic, lead and mercury.”

But to fully understand the minuscule size of these particles, it helps to compare them to a single strand of human hair. “A human hair is about 70 micrometers in diameter - a PM2.5 particle is 30 times smaller.”

Small particles, like the PM2.5, penetrate deeply into lungs “before they are taken up by the blood and transported around the body to our organs.

“This starts a process of systemic inflammation all around our bodies, which interferes with how our organs function normally.”

In a recent presentation at an air quality colloquium in Parliament, Professor Eugene Cairncross said monitoring of PM2.5 in South Africa “remains poor but it’s most important from a health impact perspective”.

BROKEN PROMISES ON THE HIGHVELD

AIR quality in the Highveld Priority Area has not improved in the past decade, despite the declaration of the priority area and the development of the air quality management plan. “It’s likely the continued non-compliance is in large part because of the failure of key major industrial facilities to reduce their emissions adequately, or at all.”

This is one of the key findings of the Centre for Environmental Rights report, which finds that without adequately functioning, accredited monitoring stations “we don’t know whether the air quality is actually far worse than it appears”.

Monitoring pollution leaves much to be desired. “The Highveld Priority Area ambient air quality monitoring network has deteriorated since the declaration. In the 2012 air quality management plan, 23 monitoring sites with available data were listed, but the DEA’s (2017) draft review of the plan listed only nine monitoring stations with available data - and only five of those nine publish timeous monthly reports that can be accessed on the SA Air Quality Information website.”

It’s difficult to assess directly whether key industries have reduced emissions, given that neither government nor industries make key data and documents publicly available for review. “Information that does exist is not complete or updated, or not easily accessible.”

It finds, too, that negligible measures have been taken for the past 10 years to reduce dust emissions, particularly from mining activities, one of the major contributors to poor air quality on the highveld.

It notes the support provided by the DEA for local authorities is inadequate.

“Municipalities only have a few of the right people to do air quality work. These officials are over-stretched to the extent they are unable to devote adequate time to air quality management.”

Limited steps have been taken to reduce air pollution in low dense, low-income settlements.

Local activist Promise Mabila concurs.

“We’re always told we’re the cause of pollution, but we only burn coal in winter to warm our homes - and where are the alternatives? Everywhere you look here, are mines, mines and more mines. Our water and our farming land is contaminated.”

The report says that given “continued non-compliance”, immediate steps must be taken to reduce emissions of pollutants.

“In recognition of the crucial importance of air quality compliance in the Highveld Priority Area, a comprehensive compliance monitoring and enforcement programme must be put in place by the DEA and local authorities to ensure violations are detected, and enforcement action taken.”

Institutions charged with ensuring improved air quality in the highveld must be strengthened and appropriately resourced and there must be “far greater transparency about regulation, monitoring and compliance”.

WHAT THE DEPARTMENT OF ENVIRONMENTAL AFFAIRS SAYS

“Ambient air quality data collected by the network in the Highveld Priority Area (HPA) indicates there have been notable improvements in PM 2.5 and PM 10 levels in monitoring sites such as Ermelo, Hendrina and Middelburg, while in 2015 and 2016, (the) Secunda and Emalahleni sites showed a reversal of the improvements realised since 2008.

“SO₂ concentrations have also shown improvements across all the five monitoring stations in the HPA.

“The report fails to recognise these improvements ... The reality is that the desired improvements will not happen over a short period of time .

The DEA has five SANAS accredited stations in the HPA that report to the SA Air Quality Information System website. These stations are strategically located to assess the quality of air in populated areas within the HPA.

“Significant progress has been made to address challenges, with networks for the Mpumalanga government and Ekurhuleni municipality coming back into operation.

“Data is currently being collected to give a better picture of emissions not just in the HPA but for the rest of the country.

“We recognise the impact of dust emissions and hence the National Dust Control Regulations promulgated in 2013 ... Work is under way to amend the regulations to ensure they are more effective.

“The district and local municipalities (in the HPA) have invested significantly in human capacity to ensure effective execution of air quality management functions.

“Each of the facilities that received postponements (from minimum emission standards) was first required take measures to reduce emissions and to implement offsets projects targeting pollutants of concern. “ - Department spokesperson Albi Modise

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