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Integrated Resource Plan 2018 – The Climate Energy and Health Special Interest Group of the Public Health Association of South Africa comment

The Climate Energy and Health (CEH) Special Interest Group (SIG) of the Public Health Association of South Africa (PHASA) is a network of public health practitioners and advocates for healthy energy policy and practice in South Africa. Energy is a major public health issue, polluting local communities and driving global climate change. The IRP presents a significant opportunity to set South Africa on a healthier energy path.

Climate Change and Health Impacts

Leading health scientists are now characterising climate change as the greatest public health challenge of the 21st century, threatening all aspects of the society in which we live¹. The severity of the impacts of climate change on human health are clearer than ever before and will worsen if significant action is not taken to tackle climate change now. Indeed, climate change threatens to undermine over a half-century's worth of global improvements in health, achieved through dedicated and targeted action by policymakers and health professionals around the world².

The most recent scientific evidence on climate change presented by the Intergovernmental Panel on Climate Change (IPCC) in Korea on 8 October 2018 urgently calls for much more ambitious reductions in CO₂ emissions to avoid unprecedented irreversible damage to our climate. Current global commitments put us on track to double carbon emissions by 2030 and predict well above 3°C of warming relative to pre-industrial levels by 2050.

As the world moves closer to a 1.5 °C temperature increase relative to pre-industrial levels, the health impacts are mounting from increasingly severe storms, floods, droughts and fires; from the migration of vector-borne diseases; and from the growing migration of millions of climate refugees.

¹ <https://www.thelancet.com/commissions/pollution-and-health>

² Wang, Horton (2015). Tackling climate change: the greatest opportunity for global health:
[https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(15\)60931-X/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(15)60931-X/fulltext)



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If we surpass 1.5 degrees the health effects of climate change are likely to intensify, impacting the lives of people everywhere, and threatening to overwhelm our health systems' ability to respond.

For South Africa, global warming of 3°C could mean a temperature rise of nearly 6°C, as our country is impacted twice as much as the global average. South Africa recently faced one of our most serious droughts and water crises in its recent history. These are brutal consequences for South Africa's poor people, who suffer the most from food and water shortages.

South Africa is the world's 14th largest emitter of greenhouse gases (GHGs). Our CO₂ emissions are principally due to our heavy reliance on coal for electricity generation. Yet our new National Climate Change Bill published in June 2018³, calls the nation to "build an effective climate change response and ensure the long-term, just transition to a climate resilient and lower carbon economy and society". The Bill acknowledges that human-caused climate change "represents an urgent threat to human societies" and sets out targets for reducing emissions and the need to adapt to climate impacts. It mandates that government must, "establish a national environmentally sustainable development framework" to achieve the act's objectives. The Bill also sets out a requirement for emissions targets for "greenhouse gas emitting sectors and sub-sectors" every five years.

Climate Change and Air Pollution in South Africa

Climate change emissions are also correlated with air pollution. Globally air pollution from fossil fuel combustion significantly affects morbidity and mortality in the shorter term too, with approximately 7 million excess deaths annually across the world, most due to exposure to high concentrations of particulate matter (PM)⁴. According to the South African National Department of Environmental Affairs (DEA),⁵ air quality falls short of the South African ambient air quality standards (AAQS) on a regular basis. This is especially the case in the Highveld, Vaal Triangle Airshed, and Waterberg-Bojanala, which have been declared Priority Areas in terms of section 18 of the National Environmental Management: Air Quality Act, 2004 (AQA).

Despite two of these areas (the Vaal Triangle Airshed and Highveld) having been declared Priority Areas more than a decade ago by the then Minister of Environmental Affairs & Tourism, air pollution in both areas remains dangerously high for human health. The poor air quality in the Highveld Priority Area (HPA) specifically, was confirmed by the DEA's own "Medium-term Review of the 2011

³ https://www.environment.gov.za/mediarelease/molewa_publishes_nationalclimatechangebillforpubliccomment

⁴ WHO | Air pollution - World Health Organization: <https://www.who.int/airpollution/en/>

⁵ See latest State of the Air Reports for the Vaal and Highveld at <https://cer.org.za/wp-content/uploads/2018/10/2018-06-28-VTAPA-MSRG-State-of-Air-Report.pdf>; <https://cer.org.za/wp-content/uploads/2018/10/2018-06-27-WBPA-MSRG-State-of-Air-Report.pdf> and http://www.airqualitylekgotla.co.za/assets/2017_1.3-state-of-air-report-and-naqi.pdf



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Highveld Priority Area: Air Quality Management Plan”, published in February 2017,⁶ and by independent research and analysis by three non-governmental organisations⁷, detailed in a report entitled “Broken Promises” published in October 2017.⁸

Air pollution and Health Impacts in South Africa

The ongoing exceedances of national AAQS are closely correlated with non-communicable diseases affecting residents in the Priority Areas. These include heart attack deaths, strokes, lung cancer, and chronic obstructive pulmonary disease. Health impacts are largest among women, children, older people, and the poor.⁹ According to the 2011 HPA AQMP, respiratory hospital admissions result primarily from domestic coal in Johannesburg and Ekurhuleni; power generation activities were estimated to account for 51% of hospital admissions in Mpumalanga, and the Sasol Secunda complex for 17%. Although AAQS are intended to be based on considerations of health safety, there are no safe levels of exposure to several pollutants emitted by these sources, especially fine PM_{2.5}. In addition, many South African AAQS are significantly weaker than the WHO’s outdated 2005 guidelines, which are currently under review. This means that even if the Priority Areas were able to achieve compliance with AAQS, residents would still be subjected to dangerous levels of pollution.

Industrial emissions, particularly from coal-fired power generation, are major sources of South Africa’s air pollution, as well as being the most significant contributors to climate change. Eskom and Sasol are South Africa’s biggest emitters of the regulated criteria pollutants, which through ambient concentrations, bioaccumulation, and/or deposition present a threat to health, well-being, and the environment. A 2016 study by air quality and health expert Dr Mike Holland estimated that fine particulate air pollution from Eskom’s coal-fired power stations alone causes over 2200 deaths and almost a million lost working days per year, costing the economy in excess of \$2.3 billion or about R28 billion per year.¹⁰

The need for a Just Energy Transition (JET) in South Africa

President Ramaphosa has recently announced plans for a major shift away from coal and alongside this the expansion of renewables. He also recently stated on CNN that Cape Town’s recent drought

⁶ https://cer.org.za/wp-content/uploads/2016/07/HPA-AQMP-Midterm-review-Draft-Report_February-2016.pdf

⁷ The Centre for Environmental Rights has, in collaboration with groundWork and the Highveld Environmental Justice Network, conducted its own analysis to determine whether the declaration of the HPA and the promulgation of the AQMP have improved air quality within the HPA to protect health; and if not, why not?

⁸ Broken Promises: The Failure of the Highveld Priority Area <https://cer.org.za/programmes/pollution-climate-change/publications/broken-promises-the-failure-of-the-highveld-priority-area>

⁹ See, for example: [http://www.who.int/news-room/fact-sheets/detail/ambient-\(outdoor\)-air-quality-and-health](http://www.who.int/news-room/fact-sheets/detail/ambient-(outdoor)-air-quality-and-health); <https://ehp.niehs.nih.gov/ehp299/>.

¹⁰ Holland, M. *Health impacts of coal fired power plants in South Africa* <https://cer.org.za/wp-content/uploads/2017/04/Annexure-Health-impacts-of-coal-fired-generation-in-South-Africa-310317.pdf>



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showed climate change was a reality, adding: “If people around the world ever thought climate change is just a fable, we in South Africa are now seeing the real effects of climate change. We are facing a real, total disaster in Cape Town, which is going to affect more than four million people.”

Despite the urgency of cutting carbon emissions however, the draft IRP 2018 proposes adding coal to the national energy mix, which will add carbon emissions to the global carbon pool. The inclusion of 1000MW of new coal capacity from the proposed independent power producer (IPP) coal-fired power stations, Thabametsi and Khanyisa (making them two of the most GHG -intensive plants in the world) would cost South Africa an additional R23 billion¹¹. This is despite the draft IRP’s acknowledgement that a least-cost scenario would not include any new coal capacity.

These plans would have devastating impacts on South Africa’s water resources, air quality, and climate, especially considering our current over-capacity of electricity¹². We therefore need to accelerate policy action to protect the health of our people and the planet from climate change by keeping the global temperature increase under 1.5 degrees.

Furthermore we need transformative change away from an inequitable fossil fuel-based economy to one based on clean, renewable energy, sustainable agriculture, climate justice and health equity. Health professionals, hospitals, health systems and health organizations are increasingly committed to help lead this “Just Energy Transition (JET)” by reducing their own substantial carbon footprints, investing in climate resilience, and advocating for transformative policies that prevent climate change from becoming a full-blown health emergency.

Multiple examples from around the world illustrate that climate-resilient, inclusive, prosperous and healthy societies are possible. Energy planning must be about a rapid transition from coal to renewables and it must be embedded in the larger conception of a just transition to a society that provides for all. Renewable power has risen rapidly in South Africa since 2013 and provided 3.4% of electricity in 2017¹³. The cost of renewables, notably solar and wind, has fallen significantly in South Africa. Solar PV and wind costs have fallen 80% and 60%, respectively, in just four years. New renewable capacity is now “considerably cheaper” than coal plants proposed or under construction¹⁴.

¹¹ <https://cer.org.za/news/media-release-thabametsi-climate-impact-assessment-reveals-staggering-greenhouse-gas-emissions>

¹² Forecasts for Electricity Demand in South Africa (2017 – 2050) using the CSIR Sectoral Regression Model for the Integrated Resource Plan of South Africa: <http://www.energy.gov.za/IRP/irp-update-draft-report2018/CSIR-annual-elec-demand-forecasts-IRP-2015.pdf>.

¹³ <https://www.bp.com/en/global/corporate/energy-economics/statistical-review-of-world-energy.html>

¹⁴ <https://www.iddri.org/en/publications-and-events/report/coal-transitions-south-africa>



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Conclusion

The Climate Energy and Health (CEH) Special Interest Group (SIG) of PHASA sees the IRP as a significant opportunity for the South African government to exclude new coal capacity and hence mitigate climate change emissions, air pollution and improve public health. We add our voice to those of others calling for a just energy transition now for the sake of our common future.

Sincerely

James Irlam

Chairperson: Climate Energy and Health (CEH) Special Interest Group (SIG)

Public Health Association of South Africa (PHASA)