

**“ANNEXURE A”**

<b>GROUNDWORK</b>	<b>First Appellant</b>
<b>VUKANI ENVIRONMENTAL JUSTICE</b>	<b>Second Appellant</b>
<b>MOVEMENT IN ACTION</b>	
<b>NATIONAL AIR QUALITY OFFICER</b>	<b>First Respondent</b>
<b>ESKOM HOLDINGS SOC LTD</b>	<b>Second Respondent</b>

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**APPEAL PURSUANT TO SECTION 43(1) OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998, AGAINST THE NATIONAL AIR QUALITY OFFICER’S DECISION REGARDING ESKOM’S APPLICATION FOR POSTPONEMENT OF COMPLIANCE TIMEFRAMES RELATING TO THE NATIONAL ENVIRONMENTAL MANAGEMENT: AIR QUALITY ACT 39 OF 2004 MINIMUM EMISSION STANDARDS**

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**A. INTRODUCTION**

1. This is an appeal to the Honourable Minister of the Department of Forestry, Fisheries and Environment (**DFFE**) in terms of section 43(1) of the National Environmental Management Act (**NEMA**), read together with Regulation 3(1) of the National Appeal Regulations, 2014 (the “**Appeal Regulations**”) and the Guideline on the Administration of Appeals, 2015 (the “**Appeal Guidelines**”), in respect of the National Air Quality Officer’s decision on Eskom’s application for postponement of compliance with the Minimum Emission Standards (“**MES**”) for its Kusile Power Station (“**Kusile**”), dated 5 June 2023 (“**the decision**”).
2. In terms of Section 21 of the National Environmental Management: Air Quality Act, 2004 (“**AQA**”), the List of Activities came into force on 1 April 2010. It prescribes the MES for various polluting activities, including for pollutants emitted from Eskom’s solid-fuel (coal) combustion installations.
3. The purpose of the MES and the List of Activities is — as the full title of the List of Activities suggests — to control and reduce the emission of harmful pollutants

which may have a significant detrimental impact on the environment, including health, social, and economic conditions, amongst others. Subject to its correct implementation and enforcement, the MES in the List of Activities is referenced as a reasonable legislative measure to give effect to section 24 (a) and (b) of the Constitution of the Republic of South Africa, 1996 (the “**Constitution**”).

4. This Appeal is lodged with the Appeal and Legal Review Directorate to challenge the decision issued by the First Respondent, the National Air Quality Officer (“**NAQO**”) granting the Second Respondent, Eskom Holdings SOC Ltd (“**Eskom**”) a postponement of compliance with the MES for a new plant in terms of paragraph 11(A) of the List of Activities in respect of its Kusile power station from 5 June 2023 to 31 March 2025 with a limit of 3500 mg/Nm<sub>3</sub> for Sulphur Dioxide emissions (“**SO<sub>2</sub>**”) when temporary stacks 7, 8 and 9 will operate during the repairs to the West stack of units 1, 2 and 3 at Kusile.
5. This appeal addresses the following aspects:
  - 5.1. The Parties;
  - 5.2. Background;
  - 5.3. The Relevant Legal Framework;
  - 5.4. Decision and Grounds of Appeal; and
  - 5.5. Conclusion and Relief Sought.
6. The First Appellant is groundWork Trust (“**groundWork**”), a non-profit environmental justice campaigning organisation working primarily in South Africa, in the areas of Climate & Energy Justice, Coal, Environmental Health, Waste, Environmental Justice Education and Environmental Justice Information. groundWork has its offices at 8 Gough Street, Pietermaritzburg, KwaZulu-Natal, South Africa.
7. The Second Appellant is Vukani Environmental Justice Movement in Action, operating as Vukani Environmental Movement (“**VEM**”) in terms of its constitution. VEM is a non-profit organisation established with the vision of promoting awareness of and advocating for environmental justice within the

Highveld Priority Area and the country. VEM has its registered address at 6157, Extension 10, Kwaguqa, Emalahleni, Mpumalanga, South Africa.

8. The First and Second Appellants are jointly referred to as the **“Appellants”**.
9. The First Respondent is the National Air Quality Officer (“**NAQO**”), the designated authority responsible for the decision in question.
10. The Second Respondent is Eskom Holdings SOC Ltd (“**Eskom**”).

## **B. BACKGROUND**

11. Kusile is located in the Highveld Priority Area (“**HPA**”) which is home to most of Eskom’s coal-fired power stations which continue to pollute the air to the detriment of residents. Having started operating in 2017, Kusile is Eskom’s newest coal power station and is the first in the Eskom fleet to be designed and constructed with sulphur dioxide reduction abatement through wet flue gas desulphurisation (“**FGD**”).<sup>1</sup>
12. Eskom alleges that on 23 October 2022, Kusile Power Station experienced a failure on the West stack, which limited the power station’s ability to operate three commissioned generating units (units 1, 2 and 3). Eskom’s preferred short-term technical solution is to return the units to service through the construction of three temporary stacks that will bypass the FGD technology while repairs to the affected stack are underway. Eskom claims that the FGD technology at Kusile, allowed the station to operate at less than 500 mg/Nm<sub>3</sub> for SO<sub>2</sub> emissions.
13. On 14 March 2023, the Minister of the Department of Forestry Fisheries and the Environment (“**DFFE**”) (hereafter referred to as **“the Minister”**) granted Eskom an exemption from paragraphs 12(a) and 12(c) of the List of Activities and accompanying MES<sup>2</sup> in terms of section 59(1) of the AQA for the Kusile stack postponement application which Eskom submitted on 2 May 2023.

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<sup>1</sup> Eskom Application for Postponement of Limits in Terms of the Minimum Emissions Standards for the Kusile Power Station (Application Document), April 2023 page 4.

<sup>2</sup> List of Activities which result in Atmospheric Emissions which have or may have a Significant Detimental Effect on the Environment, including health, social conditions, economic conditions, ecological conditions or cultural heritage, Government Notice 893 (Government Gazette 37054) of 22 November 2013, as amended

14. Paragraph 12(c) requires an application for postponement of compliance with the MES new plant standards to include a concluded public participation process undertaken as specified in the NEMA and the Environmental Impact Assessment Regulations<sup>3</sup> made under section 24(5) of the NEMA. The effect of the exemption granted by the Minister, is that Eskom was required to conduct a public participation process over a reduced period of 14 days, as opposed to conducting the public participation process within the period required in the Environmental Impact Assessment Regulations, 2014.<sup>4</sup> Paragraph 12(a) requires the application to be submitted with an Atmospheric Impact Report.
15. The public participation meetings took place on 12 April 2023 at Kendal Power Station and at eMalahleni Civic Centre respectively and were held at different times of the day. In addition, a virtual meeting took place on 13 April 2023. The concerns relating to the public participation process will be elucidated from paragraph 44 below.
16. On 21 April 2023, the Centre for Environmental Rights (“**CER**”), on behalf of the Life After Coal Campaign<sup>5</sup>, delivered a written submission on Eskom's intended application for postponement of limits in terms of MES for Kusile power station (“**the MES postponement application**”) concerning the proposed FGD bypass stacks. Unless the context indicates otherwise, the submission also applied to the parallel process in which Eskom applied to the Nkangala District Licensing Authority for a variation of its Atmospheric Emission License (“**AEL**”) for Kusile, as described in Eskom's MES Postponement Application Document (“**Application Document**”).

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(“List of Activities”) under the National Environmental Management: Air Quality Act, 2004 (AQA) (with accompanying Minimum Emission Standards (MES)).

<sup>3</sup> Environmental Impact Assessment Regulations, 2014 Published under GN R982 in GG 38282 of 4 December 2014.

<sup>4</sup> National Environmental Management Act. Environmental Impact Assessment Regulations, 2014 Published under GN R982 in GG 38282 of 4 December 2014 [with effect from 8 December 2014]

<sup>5</sup> Life After Coal campaign, a joint campaign by the Centre for Environmental Rights (CER), groundWork (gW), and Earthlife Africa Johannesburg (ELA) that aims to: discourage the development of new coal-fired power stations and mines; reduce emissions from existing coal infrastructure and encourage a coal phase-out; and enable a just transition to sustainable energy systems for the people. CER, gW, ELA, are registered interested and affected parties (I&APs) in relation to Eskom's applications for suspension of compliance, postponement of compliance, and/or alternative limits.

17. The Appellants stand by the above-mentioned submission and the expert analysis underpinning it. For ease of reference, the submission is attached to this appeal as "**Annexure A1**".
18. On 2 May 2023, Eskom submitted the MES postponement application to the NAQO and Nkangala District Authority. On 2 June, Interested and Affected Parties ("I&APs) received a copy of the finalised Atmospheric Impact Report commissioned by Eskom in support of its application. On 5 May 2023, Environmental Impact Management Services ("EIMS") sent the Eskom's response to the aforementioned written submission to the Centre for Environmental Rights ("CER"), aspects of which will be addressed in the succeeding sections of this appeal. On 5 June 2023, the NAQO issued a decision wherein she granted Eskom's MES postponement application in relation to Kusile, the decision is subject to certain conditions which will be elucidated in the subsequent sections of this appeal. The decision is attached as "**Annexure A2**".
19. On 9 June 2023, I&APs received a copy of the Health Impact Assessment Report also commissioned by Eskom in support of its application, in addition, EIMS informed I&APs that "*Eskom will be developing a monitoring plan in respect of the Kusile temporary stack proposal and will share this plan for stakeholder input during June 2023*".
20. On 14 June 2023, EIMS sent a notification to I&APs regarding the decision of the NAQO granting the MES postponement application. According to regulation 4(1) of the Appeal Regulations, an appellant must submit an appeal within 20 days from the date of the notification of the decision. In this case, the end of the 20-day period falls on 5 July 2023. The appellants have therefore complied with this regulation.

## **C. RELEVANT LEGAL FRAMEWORK**

### ***The Constitution and National Environmental Management Principles***

21. The Constitution of the Republic of South Africa, 1996, guarantees everyone the right to an environment not harmful to health or well-being, and to have the environment protected, 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 use of natural resources while promoting justifiable economic and social development.<sup>6</sup>

22. The Constitution is the supreme law, therefore any law or conduct deemed to be inconsistent with it is invalid, and the obligations imposed by it must be fulfilled.<sup>7</sup> All law and conduct must be measured against, and give effect to, the environmental rights in section 24 of the Constitution, consistent with an open and democratic society based on human dignity, equality, and freedom.
23. NEMA as the overarching environmental legislation which implements section 24 of the Constitution, and in section 2, provides environmental management principles (the “**NEMA Principles**”) which any organ of state must adhere to in all decision-making and when exercising other functions. Some of these binding directive principles are as follows (added emphasis):
  - a. the **environment is held in public trust for the people**, the beneficial use of environmental resources must serve the public interest and the environment must be protected as the people’s common heritage (“**public trust doctrine**”);<sup>8</sup>
  - b. a **risk-averse and cautious approach** must be applied, which takes into account the limits of current knowledge about the consequences of decisions and actions (“**precautionary principle**”);<sup>9</sup>
  - c. **negative impacts on the environment and on people’s environmental rights must be anticipated and prevented**, and where they cannot be altogether prevented, must be **minimised and remedied** (“**preventive principle**”);<sup>10</sup>
  - d. **pollution and degradation of the environment are avoided**, or, where they cannot be altogether avoided, are minimised and remedied (“**preventive principle**”);<sup>11</sup>

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<sup>6</sup> Section 24 of the Constitution.

<sup>7</sup> Section 2 of the Constitution.

<sup>8</sup> Section 2(4)(n) of NEMA.

<sup>9</sup> Section 2(4)(a)(vii) of NEMA.

<sup>10</sup> Section 2(4)(a)(viii) of NEMA.

<sup>11</sup> Section 2(4)(a)(ii) of NEMA.

- e. **environmental justice** must be pursued so that adverse environmental impacts shall not be distributed in such a manner as to unfairly discriminate against any person, particularly vulnerable and disadvantaged persons;<sup>12</sup>
- f. responsibility for the environmental health and safety consequences of a policy, programme, project, product, process, service or activity exists throughout its lifecycle;<sup>13</sup>
- g. **sensitive, vulnerable, highly dynamic or stressed ecosystems...require specific attention in management and planning procedures**, especially where they are subject to significant human resource usage and development pressure;<sup>14</sup>
- h. the **cost of remedying the pollution, environmental degradation and consequent adverse health effects** and of preventing, controlling or minimising further pollution, environmental damage or adverse health effects **must be paid for by those responsible for harming the environment** (“**polluter pays principle**”);<sup>15</sup>
- i. use and exploitation of non-renewable natural resources must be responsible and equitable, and take into account the consequences of the depletion of the resource;<sup>16</sup> and
- j. the participation of all interested and affected parties in environmental governance must be promoted.<sup>17</sup>

***National Environmental Management: Air Quality Act, 2004***

24. Enacted in 2005 to give effect to section 24 of the Constitution and the NEMA Principles, the AQA aims to ensure that air pollution is not harmful to human health or well-being, and to enhance the air quality in South Africa.<sup>18</sup> The AQA provides that its interpretation and application must be guided by the NEMA Principles.

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<sup>12</sup> Section 2(4)(c) of NEMA

<sup>13</sup> Section 2(4)(e) of NEMA.

<sup>14</sup> Section 2(4)(r) of NEMA.

<sup>15</sup> Section 2(4)(p) of NEMA.

<sup>16</sup> Section 2(4)(a)(v) of NEMA.

<sup>17</sup> Section 2(4)(f) of NEMA

<sup>18</sup> Section 2 of the AQA

25. Accordingly, the NAQO, licensing authorities, and Eskom (as organs of state) must adhere to the NEMA Principles and legal provisions of the AQA in their decision-making and exercise of designated functions – including the consideration of Eskom’s application to further delay and/or completely avoid compliance with air pollution laws that primarily exist to protect people’s health and well-being.
26. In terms of section 9 of the AQA, the National Ambient Air Quality Standards (“**NAAQS**”) have been set for eight pollutants, including SO<sub>2</sub>, nitrogen dioxide (“**NO<sub>2</sub>**”), PM<sub>10</sub> (particles with aerodynamic diameter less than ten micron metres) and PM<sub>2.5</sub> (particles with aerodynamic diameter less than two-and-a-half micron metres). The NAAQS are intended to be health-based, and “*broadly accepted as a proxy for air that is not harmful to health and well-being*”,<sup>19</sup> or “*to objectively define what quality of ambient air South Africans agree is not harmful to their health and well-being*”.<sup>20</sup>
27. Three air-shed priority areas have been declared in terms of section 18 of the AQA on the basis that the NAAQS “*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 this “*requires specific air quality management action to rectify the situation*”.<sup>21</sup> The Vaal Triangle Priority Air-shed Priority Area (“**VTAPA**”) was declared in 2006, the Highveld Priority Area (“**HPA**”) in 2007, and Waterberg-Bojanala Priority Area (“**WBPA**”) declared in 2012. Kusile power station is situated in the HPA, which despite its priority status, remains non-compliant with the NAAQS.<sup>22</sup>
28. Importantly the Preamble to the AQA appropriately frames the factual and regulatory setting for the implementation and enforcement of the statutory tools provided in the AQA. The Preamble recognises, *inter alia*, that “*the quality of ambient air in many areas of the Republic is not conducive to a healthy environment for the people living in those areas let alone promoting their social*

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<sup>19</sup> Section 5.2.3.4 of the 2017 National Framework

<sup>20</sup> Section 5.4.3.2 of the 2017 National Framework.

<sup>21</sup> Section 18 of the AQA.

<sup>22</sup> 2022 State of the Air Report and AQM Highlights 16th Air Quality Governance Lekgotla, Session 1.4 03-05 October 2022.

[https://www.dffe.gov.za/sites/default/files/docs/2022airqualitylekgotlapresentations\\_stateofair.pdf](https://www.dffe.gov.za/sites/default/files/docs/2022airqualitylekgotlapresentations_stateofair.pdf)

*and economic advancement" and "the burden of health impacts associated with polluted ambient air falls most heavily on the poor".*

### **National Framework for Air Quality Management**

29. The AQA provides for a National Framework for Air Quality Management to achieve the objects of the AQA.<sup>23</sup> The current iteration is the 2017 National Framework for Air Quality Management (the "**2017 Framework**"), which was published in October 2018.<sup>24</sup> It aims to achieve the objectives of the AQA and provides various norms and standards to control emissions, manage and monitor air quality, and provide mechanisms, systems, and procedures to attain compliance with the NAAQS.<sup>25</sup> The 2017 Framework forms part of the definition of "this Act" in the AQA,<sup>26</sup> and "*binds all organs of state in all spheres of government*".<sup>27</sup> The AQA requires that an organ of state "*give effect to the national framework when exercising a power or performing a duty in terms of the [AQA] or any other legislation regulating air quality management*".<sup>28</sup>
30. Paragraph 5.4.3.4 of the 2017 Framework provides that: "*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:*
  - a. *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;*
  - b. *the application is accompanied by a concluded public participation process undertaken as specified in the NEMA Environmental Impact Assessment Regulations;*

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<sup>23</sup> Document available here: <https://cer.org.za/wp-content/uploads/2018/10/National-Environmental-Management-Air-Quality-Act-39-2004-the-2017-National-20181026-GGN-41996-01144.pdf>.

<sup>24</sup> Document available here: <https://cer.org.za/wp-content/uploads/2018/10/National-Environmental-Management-Air-Quality-Act-39-2004-the-2017-National-20181026-GGN-41996-01144.pdf>

<sup>25</sup> Section 7(1) of the AQA.

<sup>26</sup> Section 1(1) of the AQA

<sup>27</sup> Section 7(3)(a) of the AQA.

<sup>28</sup> Section 7(4) of the AQA.

- c. *the application is submitted to the National Department on or before 31 March 2019;*
  - d. ***ambient air quality in the area is in compliance with the applicable National Ambient Air Quality Standards;*** and
  - e. *other requirements as may be specified by the National Air Quality Officer (added emphasis).*
- 31. Paragraph 5.4.3.4 of the 2017 Framework thus stipulates that an application to postpone or suspend compliance with the MES may be considered, **provided that the NAAQS are in compliance and the air emissions are not causing direct adverse impacts on the surrounding environment, among other explicit criteria.** This phrasing is peremptory and does not allow for any discretion on the part of the decision-maker.
- 32. Paragraph 5.4.3.4 of the 2017 Framework further provides:
  - a. *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;*
  - b. *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 accepted after 31 March 2019;*
  - c. *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*
  - d. *No postponement of compliance timeframes or a suspension of compliance timeframes shall be granted for existing plant standards;*
  - e. *An existing facility may submit an application regarding a new plant standard to the National Air Quality Officer for consideration, **if the facility is in compliance with other emission limits but cannot comply with a particular pollutant or pollutants.** An application must demonstrate previous reduction in emissions of the said pollutant or pollutants,*

***measures and direct investments implemented towards compliance with the relevant new plant standards. The National Air Quality Officer, after consultation with the Licensing Authority, may grant an alternative emission limit or emission load provided there is compliance with the national ambient air quality standards in the area for pollutant or pollutants applied for; or the Atmospheric Impact Report does not show increased health risk where there is no ambient air quality standard.*** (added emphasis)

33. In light of the above, the Appellant's submit that the 2017 Framework is the “national Framework for achieving the objectives of [the AQA]”<sup>29</sup> and it “binds all organs of state in all spheres of government”.<sup>30</sup> Eskom may not lawfully apply for postponements, suspensions, or alternative emission limits, unless and until the ambient air quality within air-shed priority areas where a power station is located, is compliant with the NAAQS.
34. In light of the above, the Appellants submit that Eskom may not lawfully apply for this postponement, **unless and until the ambient air quality within the HPA, where Kusile power station is located, is compliant with the NAAQS.** As explained below, this is not the case; and for this reason alone, an application should be summarily rejected.

#### ***List of Activities and MES***

35. The List of Activities came into force on 1 April 2010<sup>31</sup> and prescribes MES for various polluting activities, including solid fuel combustion installations such as Eskom's coal-fired power stations for PM, SO<sub>2</sub> and NO<sub>x</sub> for both “new plants” and “existing plants”. Existing plants, including Kusile power station, had to comply with more lenient standards by 1 April 2015 and they must adhere to stricter new plant standards by 1 April 2020, subject to successful applications to postpone

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<sup>29</sup> See paragraph 1.3 of the 2017 Framework.

<sup>30</sup> Ibid.

<sup>31</sup> This List of activities has recent amendments published in 2018 (<https://cer.org.za/wp-content/uploads/2005/09/Section-21-Activities.pdf>) and 2020 (<https://cer.org.za/wp-content/uploads/2020/03/NEMAQA-MES-Amendment-27.03.2020-2.pdf>).

or suspend compliance where the explicit criteria for these applications have been satisfied.

36. The current MES limits appear from the NAQO's decision at paragraph 41 below.
37. The amended List of Activities provides as follows in relation to applications for postponement and suspension of MES compliance, and alternative emission limit applications:

*“(11A) An existing plant may apply to the National Air Quality Officer for a once off postponement with the compliance timeframes for minimum emission standards for [a] new plant as contemplated in paragraph (10). A once-off postponement with the compliance timeframes for minimum emission standards for [a] new plant may not exceed a period of five years from the date of issue. No once-off postponement with the compliance time frames will be valid beyond March 2025.”*

*“(11B) An existing plant to be decommissioned by 31 March 2030 may apply to the National Air Quality Officer before 31 March 2019 for a once-off suspension of compliance timeframes with minimum emission standards for [a] new plant. Such an application must be accompanied by a detailed decommissioning schedule. No such application shall be accepted [by] the National Air Quality Officer after 31 March 2019.”*

*“(11C) An existing plant that has been granted a once-off suspension of the compliance timeframes as contemplated in paragraph (11B) must comply with minimum emission standards for existing plant from the date of granting of the application and during the period of suspension until decommissioning”*

***“(11D) No postponement of compliance timeframes or a suspension of compliance timeframes shall be granted for compliance with minimum emission standards for [an] existing plant”***

***“(12A)(a) An existing plant may submit an application regarding a new plant standard to the National Air Quality Officer for consideration if the plant is in compliance with other emission standards but cannot comply with a particular pollutant or pollutants.”***

***“(12A)(b) An application must demonstrate a previous reduction in emissions of the said pollutant or pollutants, measures and direct investments implemented towards compliance with the relevant new plant standards.”***

“(12A)(c) *The National Air Quality Officer, after consultation with the Licensing Authority, may grant an alternative emission limit or emission load if:*

- (i) there is **material compliance with the national ambient air quality standards in the area for pollutant or pollutants applied for**; or*
- (ii) the **Atmospheric Impact Report does not show a material increased health risk where there is no ambient air quality standard.***” (added emphasis)

38. In light of the above, the Appellants emphasise the following legal requirements:

- 38.1. as an organ of state, significant emitter, and a major source of air pollution in South Africa, Eskom is legally required, at all times, to limit its emissions to help ensure NAAQS compliance and reduce its impacts on public health.
- 38.2. Eskom may not lawfully apply to postpone its compliance with the MES, or apply to suspend MES compliance, unless and until the ambient air quality within the three priority air-shed areas where their power stations are located are in compliance with the NAAQS – this is not the case in the HPA where Kusile power station is located;
- 38.3. alternative emission limits that are weaker than the existing plant MES, may not be considered, let alone granted; and
- 38.4. an application for an alternative limit must demonstrate a previous reduction in emissions of the said pollutant or pollutants, measures and direct investments implemented towards compliance with the relevant new plant standards, and there must be [material] compliance with the NAAQS in the area for the pollutant or pollutants applied for.

39. In light of the above legal framework and the judgement and declaratory order made in the matter *Groundwork Trust and Another v Minister of Environmental Affairs and Others*<sup>32</sup> (“**Deadly Air case or High Court judgment**”) reaffirming the immediately realisable nature of Section 24 and that the failure to adequately control air pollution in the HPA is an infringement of that right, the Appellants

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<sup>32</sup> *Groundwork Trust and Another v Minister of Environmental Affairs and Others* [2022] ZAGPPHC 208  
Referred to as the “Deadly Air case” or “High Court “judgment.

submit that the NAQO should have given more regard to the health impacts of the pollution in the HPA, and consequently refused the postponement application.

40. Considering the legal framework set out above, the grounds of appeal set out below will demonstrate that the NAQO erred in granting the postponement, and that the decision must be dismissed as unlawful and therefore set aside by the Minister as the appeal authority.

## D. DECISION AND GROUNDS OF APPEAL

41. On 5 June 2023, the NAQO granted Eskom's application pertaining to Kusile power station and made under Regulation 21 of the List of Activities as follows:

S21 Category	Appliance	Postponement Sought	Emission Standards		
			Minimum Emission Standards (mg/Nm <sup>3</sup> )		Decision
			Pollutant	2015	
Subcategory 1.1: Solid Fuel Combustion installations	Units 1,2 and 3 (measured at temporary stacks 7, 8, 9)	3500 mg/Nm <sup>3</sup> (daily) until 31 March 2025 <i>Alternatively:</i> 3000 mg/Nm <sup>3</sup> (monthly) until 31 March 2025	SO <sub>2</sub>	3500	1000
		750 mg/Nm <sup>3</sup> (daily) until 1 April 2025	NO <sub>x</sub>	1100	750
		50 mg/Nm <sup>3</sup> (daily) until 1 April 2025	PM	100	50

\* All minimum emission standards are expressed on a daily average basis, under normal conditions of 273 Kelvin, 10% oxygen and 101.3 kPa.

42. The decision is subject to the following conditions:

*"(a) Eskom is required to take measures to mitigate harm caused by the exposure of SO<sub>2</sub> to its employees and surrounding communities which measures, must, at minimum, include independent health screenings and referral to appropriate public health facilities for treatment where necessary, as stipulated in the Exemption.*

*(b) In terms of condition 14(a), Eskom is therefore required to submit [a] detailed plan on the mitigation measures it intends to put in place within 21 days of receipt of this decision for approval by the NAQO and Nkangala District Municipality.*

*(c) Eskom is required to submit quarterly progress reports on the implementation of the compliance road map and commitments made towards recommencing of the FGD in support of the postponement application for Kusile Power Station.*

*(d) This decision must be reflected in Kusile Power Station AEL to be of any force and effect. Therefore, Eskom is required, as soon as possible, to liaise with the Nkangala District Municipality so that the required amendments, variations and additions to Kusile AEL may be effected.”*

43. The NAQO’s reasons for the decision (the details of which are set out below) appear to be influenced by the current national electricity supply issue. The Appellants’ contentions with the NAQO’s approach in this regard will be detailed in the subsequent sub-sections.

*i. **Eskom failed to facilitate a fair and effective public participation process***

44. As mentioned at paragraph 14 above, the effect of the exemption granted to Eskom is that Eskom was required to conduct a public participation process over a reduced period of 14 days.
45. Decision-making remains subject to the right to just administrative action, and the prescriptions that administrative action must be lawful, reasonable, and procedurally fair.<sup>33</sup> Furthermore, Paragraph 5.9.1.1 of the 2017 Framework provides:

*“. . . 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.” (added emphasis)*

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<sup>33</sup> Section 33 of the Constitution.

46. A curtailed public participation process is still required to be adequate and facilitate a meaningful engagement with all interested and affected parties regardless of the reduced timeframe. Concerning public participation processes, the NEMA principles state that the participation of all interested and affected parties in environmental governance must be promoted, and all people must have the opportunity to develop **the understanding, skills, and capacity necessary for achieving equitable and effective participation**. Furthermore, participation by vulnerable and disadvantaged persons must be ensured. In addition, decisions must be taken in an open and transparent manner, and **access to information must be provided in accordance with the law**.<sup>34</sup>
47. Advancing effective participation is therefore required to inform decision-making in environmental management to achieve the remaining NEMA principles of environmental and social justice. The Appellants are not satisfied that people from affected communities were properly supported to understand the issues and engage meaningfully in the process.
48. On 4 April 2022, before the commencement of the public participation meetings, the CER addressed correspondence to Eskom expressing the Appellants' concerns regarding the accessibility of the venues for the public participation meetings and requesting crucial information including, details of all measures taken by Eskom to ensure that communities and individuals that are in proximity to Kusile are informed of the intended measures, the impacts, as well as about the public participation meetings, and any measures taken to ensure that such communities and individuals are enabled to attend and participate. A copy of this letter is attached and marked as "**Annexure A3**". On 6 April 2023, Eskom responded stating that "*[i]t should be noted that Eskom has seriously considered holding a meeting in Phola township. However, previous meetings in this settlement have been subject to disruption and safety/security issues, and as such, it was considered inappropriate to hold a hearing in Phola.*" A copy of Eskom's letter is attached as "**Annexure A4**".
49. As mentioned above, the first public participation meeting took place on 12 April 2023 at Kendal Power Station ("**Kendal**"). Kendal is approximately

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<sup>34</sup> Ibid.

20 kilometres away from Phola, an affected community. It has been reported that there is no adequate or reliable public transport available for community members of Phola who had intentions to attend the meeting. As a result, the attendance numbers at this meeting were very low with negligible representation of affected community members.

50. The second public participation meeting was planned for 12 April 2023 at eMalahleni Civic Centre in the evening, from 17:00 to 19:00. The chosen time slot presented challenges with accessing public transport due to the time of day. This meeting did not proceed as the few community attendees that were present were disgruntled about the shortage of available documents, the insufficient time allocated for the meeting (two hours) and the meeting time. Furthermore, only two hard copies of the Application Document were available at this meeting. Additional copies of the Application Document were requested with the agreement to convene another meeting once people had had an opportunity to engage with the contents of the document. The Appellants note that additional copies of the Application Document were indeed distributed to affected communities, however EIMS refused to convene a further meeting at the First Appellant's request citing the "*the restricted nature of the timeframes of this project.*" Correspondence in this regard is attached as "**Annexure A5**". Community members therefore did not get a chance to engage further after receiving the Application Document. Hard copies should have been made available in the communities, giving them an opportunity to peruse them beforehand to allow for meaningful and effective engagement.
51. It is apparent that the logistical arrangements of these meetings presented significant access challenges for affected communities and hindered attendance. The Appellants are not convinced that adequate steps were taken to support affected communities with sufficient information, understanding, skills and the capacity necessary for achieving equitable and effective participation. In addition, the site placement of the notices leaves much to be desired as the notices should have been put up in community centres.
52. The safety concerns cited by Eskom are noted; however, the Appellants maintain that alternative venues that are closer to Phola township should have been

considered, bearing in mind that community members may have to use more financial resources to access venues that are located further away from them. Furthermore, the time set aside for the meetings (two hours) is too short for a meaningful engagement on a crucial issue such as this with grave consequences for affected communities.

53. The dissemination of relevant information i.e., the Application Document was wholly insufficient. Placing copies of this document at Kendal and Kusile is impractical as there is no adequate or reliable public transport to these power stations from affected areas. In any event, even if people had access to transport to the power stations, it is unfair to expect communities to use their resources to travel to collect these documents. In addition, a majority of affected community members could not access or download these documents from the EIMS website due to connectivity issues.
54. The information used to motivate the application is complex, technical and, to the best of the Appellants' knowledge, only provided in English. The crisp issues – including that Eskom is planning to bypass SO<sub>2</sub> abatement issues and emit high quantities of the pollutant, and the expected health impacts – should have been clearly explained, in all relevant languages, so that the application process could be meaningfully engaged with by affected parties.
55. The Appellants also wish to place on record, Eskom's failure to provide them with a meaningful cost benefit analysis, including approximate costs of both the temporary and permanent repairs, as compared with less harmful alternatives for providing equivalent electricity generation capacity. This is relevant information that would have contributed to a meaningful engagement on the issue.
56. Public participation must embody the NEMA principles to be inclusive, meaningful and effective, regardless of the curtailed time periods. The Appellants take issue with the failure to reasonably accommodate members of affected communities. Local communities must be given the tools to meaningfully engage and participate through the use of plain and understandable language, translation, the dissemination and explanation of relevant of information, adequate notice of the meetings and the consideration of the accessibility of the venues for these meetings. Public participation should not merely be taken as a

“tick box exercise”, especially in this instance where the decision made will impact human health without observing procedural safeguards whose purpose is to ensure that harms are mitigated or avoided.

57. The Constitutional Court has previously held that a general purpose of consultation is to provide parties with *“the necessary information on everything that is to be done so that they can make an informed decision in relation to the representations to be made, whether to use the internal procedures if the application goes against them and whether to take the administrative action concerned on review. The consultation process and its result is an integral part of the fairness process because the decision cannot be fair if the administrator did not have full regard to precisely what happened during the consultation process in order to determine whether the consultation was sufficient to render the grant of the application procedurally fair.”*<sup>35</sup>
58. The Appellants therefore submit that a proper public participation process would have ensured that meetings take place at venues accessible to affected community members or transport is provided, that relevant and understandable information is disseminated before the meeting at key locations within the community, and lastly, that the meetings allow enough time for a proper ventilation of the issues by all parties.
59. Considering the above and the environmental injustice experienced by many vulnerable and disadvantaged communities, especially those surrounding many of Eskom’s power stations in the HPA, the need to promote community attendance through selecting easily accessible venues and/or assistance with transport to meeting venues is emphasised. Eskom should have recognised this limitation in planning the public participation process.
60. Based on the above, the Appellants submit that this public participation process cannot be considered to have been sufficient and successful. In addition, the poor attendance of community members at the meetings is a stark indication of

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<sup>35</sup>*Bengwenyama Minerals (Pty) Ltd and Others v Genorah Resources (Pty) Ltd and Others* (CCT 39/10) [2010] ZACC 26; at paragraph 66.

this. Therefore, the Appellants submit that there was no meaningful engagement with the affected communities.

*ii. The decision to grant Kusile power station a postponement of compliance with the SO<sub>2</sub> new plant standard from 5 June 2023 to 31 March 2025 is unlawful*

61. The NAQO's decision allows Eskom to only have to comply with the existing plant standard. The Appellants submit that this decision is unlawful.
62. Kusile power station is located in the HPA, which was declared as such more than 16 years ago. This alone bars the NAQO from authorising postponement applications for Kusile power station, in accordance with 5.4.3.4 of the 2017 Framework. In the paragraphs that follow, the Appellants explain that Eskom failed to demonstrate that its emissions are not causing direct adverse impacts on the surrounding environment. The excess SO<sub>2</sub> emissions that are going to be released into the air because of this Decision, will only serve to exacerbate adverse environmental and health impacts. As explained below, the air quality in the HPA is already of poor quality due to NAAQS non-compliance.
63. The Appellants submit that the Revised Atmospheric Impact Report ("Revised AIR") submitted in support of Eskom's application is problematic for a number of reasons:
  - 63.1. **The Emissions Inventory is incomplete for particulate matter sources.**
    - 63.1.1. Only "wind erosion" and "materials handling" have been modelled. But to what extent these two categories include all of the many PM-emitting activities tied directly to Kusile – such as coal transport, storage, handling; ash storage, transport, disposal; emissions of trucks on plant roads; etc. – is not clear.
    - 63.1.2. To the extent all of these Kusile-related activities are not modelled, the results and conclusions for PM<sub>10</sub> and PM<sub>2.5</sub> modelling shown in the Revised AIR underestimate the impact of Kusile's operations.

63.1.3. The PM emissions which have been modelled, rely on emissions estimates that are known to underpredict emissions. Only emissions from wind erosion and materials handling have been included as area or fugitive sources. They rely, as highlighted, on Australian and/or US EPA AP-42 factors. The use of the Australian factors along with the assumptions, particularly silt content of 2.2% is unsupported by data. The AP-42 factor for handling has been shown to severely underpredict emissions.

63.2. PM<sub>2.5</sub> impacts appear to be especially underpredicted. There is no basis to assume that only 50% of the PM each/all of the sources of PM is PM<sub>2.5</sub>. For example, the stack PM<sub>2.5</sub> fraction is likely much greater since the units are equipped with baghouses.

63.3. Table 4-1 in the Revised AIR<sup>36</sup> demonstrating point source parameters assumes that for the temporary scenarios, the temporary stacks, at 116 meters in height, would not even rise above the nearby buildings. With stacks that are shorter than the nearby buildings, the near-field dispersion would be highly problematic, leading to fumigating conditions, where the plume cannot disperse properly, and its behaviour cannot be properly modelled therefore under all meteorological conditions. It is unclear how the Revised AIR accounts for this in the modelling. As a result, the predicted impacts for the temporary stack emissions are highly unreliable.

63.4. Table 4-7 in the Revised AIR portrays emissions during start-up, maintenance, upset and/or shut down.<sup>37</sup> This table admits that certain startup, shutdown, upset, and maintenance conditions can result in high emissions. However, these scenarios have not been modelled. This clearly demonstrates that the impacts noted in the AIR are underestimated.

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<sup>36</sup> Table 4-1 is found at page 15 of the Revised AIR here: [\\*RAIR.pdf \(eims.co.za\)](#)

<sup>37</sup> Table 4-7 can be found on page 18 of the Revised AIR found here: <https://www.eims.co.za/wp-content/uploads/2023/Public/1572/RAIR.pdf>

63.5. A brief note by Dr. Ranajit Sahu of Earth Justice<sup>38</sup> outlining the above comments on the Revised AIR in fuller detail is attached as **“Annexure A6”**.

64. In addition, according to the Revised AIR, data from the air quality monitoring stations in Kusile’s vicinity reveal that there is non-compliance with the NAAQS<sup>39</sup> for PM<sub>10</sub>.<sup>40</sup> Furthermore, it is especially disturbing to note that significant impacts are predicted at the Sibongindawo Primary School. Although the impacts are underestimated in the Revised AIR, it still contributes to the point that the air quality around Kusile is poor and there is non-compliance with the NAAQS. This is in contravention of paragraph 5.4.3.4 of the 2017 Framework.

65. The air quality in the HPA poses a risk to residents’ health. According to section 18(5) of the AQA, a priority area’s declaration can only be withdrawn if the area is in compliance with the NAAQS for more than 2 years. The declaration of the HPA has remained in place for 16 years. This demonstrates that the measures in place to address the persistent non-compliance with NAAQS and poor air quality in the area are proving to be insufficient. As a newer power station, this decision effectively authorises Kusile to exacerbate the current public health crisis in the HPA, caused mainly by Eskom’s older and mid-life power stations.

66. No industries operating within these Priority Areas should be permitted to apply for postponement, suspension or alternative limits and submit that granting such applications will only exacerbate the high levels of air pollution, and its dire impact on human health, well-being, and the environment; which would in turn, make it even more difficult for the Priority Areas to meet their goals of ensuring compliance with the NAAQS. Eskom, in particular, continues to insist on non-compliance with the MES, as evidenced by its previous multiple suspension and postponement applications in relation to its other power stations, at the cost of

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<sup>38</sup> Earthjustice is the premier nonprofit public interest environmental law organization - [About - Earthjustice](#).

<sup>39</sup> National Ambient Air Quality Standards Published under Government Notice 1210 in Government Gazette 32816 dated 24 December 2009 in terms of the National Environmental Management: Air Quality Act 39 of 2004.

<sup>40</sup> See the RAIR here: [\\*RAIR.pdf \(eims.co.za\)](#)

the lives and health of surrounding communities. Eskom is the major contributor to the poor air quality in the area.<sup>41</sup>

67. There is overall non-compliance with the NAAQS in the Priority Areas. The DFFE's 2022 State of the Air Report states that despite the low data recovery from the National Ambient Air Quality Monitoring Network ("NAAQMN"), particulate matter is still of great concern especially in the Gauteng and Mpumalanga provinces. When considering the impact of excess SO<sub>2</sub>, PM is relevant as there is a notable link between SO<sub>2</sub> and PM. In 2018, an expert panel ("the SO<sub>2</sub> Panel") was appointed to provide strategic and technical guidance towards effective management of SO<sub>2</sub> from old and existing power generation plants. The SO<sub>2</sub> Report (which is still in draft form at this stage) alludes to this connection and states:

*"Due to atmospheric transport and transformation, **these emissions of SO<sub>2</sub>, especially when they transform to particulate matter (PM), can impact a large geographical region**, so that it is difficult to delimit the affected airshed. Exceedances of the PM2.5 (PM with aerodynamic diameter of 2.5 micrometre and smaller) and PM10 (PM with aerodynamic diameter of 10 micrometre and smaller) NAAQS occur frequently at monitoring stations across the country; secondary particle formation from SO<sub>2</sub> emissions contribute to these."*<sup>42</sup>

The Report further notes:

*"SO<sub>2</sub> itself and as a precursor to PM<sub>2.5</sub> is impacting the environment and public health, especially in the air quality priority areas. Much of the impact is seen through secondary PM and thus studies should include a large enough domain to consider the impacts thereof."*<sup>43</sup> (added emphasis)

68. As contemplated in terms of paragraph 5.4.3.4 of the 2017 Framework, the law, as amended, is clear that only in such cases where the areas in which the power stations are based are in compliance with NAAQS (which the HPA is not), can postponement, suspension, or alternative limit applications even be considered.

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<sup>41</sup> See report by Dr. H. Andrew Gray "Air quality impacts and health effects due to large stationary source emissions in and around South Africa's Mpumalanga Highveld Priority Area (HPA)". See page 2 of the Report which states: "[Eskom's] 14 facilities are responsible for the lion's share of air pollution.

<sup>42</sup> SO<sub>2</sub> Report at page 8.

<sup>43</sup> SO<sub>2</sub> Report at page 44.

In terms of section 1(a)(ii) of the Promotion of Administrative Justice Act, 2000 (“PAJA”), the powers to exercise administrative action are derived from and only extend insofar as the legislation allows. Therefore, the granting of the postponement application in respect of Kusile is *ultra vires* the Constitution, the AQA, the amended List of Activities, the 2017 Framework, and the provisions of NEMA.

*iii. The NAQO failed to give due consideration to the health impacts of air pollution and the ensuing constitutional rights violation.*

69. This is closely related to the ground discussed above. In the decision, the NAQO claims the following:

*“The failure of Kusile West stack has worsened the electricity crisis affecting the country causing:*

- (i) National economic impact seen locally and individually with businesses and individuals.*
- (ii) Unfortunate outcome of economic impact is job losses.*
- (iii) Loadshedding also results in environmental impacts.*
- (iv) Power outages impact human health; and*
- (v) Other impacts of load shedding include traffic impacts, supply chain and food shortages, increased poaching of natural resources and even an increased risk of civil unrest.”*

The NAQO further claims that:

*“I have considered Eskom’s application, atmospheric impacts reports and temporary stacks applications **relating to the impacts on health and environment but balancing this against the negative impacts of electricity supply**, it is determined that the application should be granted.” (added emphasis)*

70. The laws and policies which form part the Air Quality Management Regime – the AQA, including the MES and the NAAQS – were put into place to protect public health and Constitutional rights. Therefore, due consideration and weight must

be placed on the detrimental effects of non-compliance with these standards on residents and the ensuing health costs and effects on the national fiscus.

71. SO<sub>2</sub> has multiple adverse health effects. The SO<sub>2</sub> Report (referred to in paragraph 67 above) considers the health impacts of SO<sub>2</sub> emissions and acknowledges the adverse effects. The Report states: “*around the world, SO<sub>2</sub> is known to have major impacts on human health that cannot be ignored. South Africa’s dire inequality and inequity means that the vulnerable and indigent communities are most affected by SO<sub>2</sub>.*” (Emphasis added).<sup>44</sup>
72. The SO<sub>2</sub> Report recognises that even in instances when SO<sub>2</sub> levels meet the NAAQS, there are adverse respiratory health impacts related to SO<sub>2</sub> exposure which occur, especially among children.<sup>45</sup> From epidemiological studies focused on the HPA and the Vaal Triangle Airshed Priority Area (“**VTAPA**”) specifically, there are health impacts in these regions due to exposure to air pollution and SO<sub>2</sub>.<sup>46</sup> According to the SO<sub>2</sub> Report, some of the health impacts associated with SO<sub>2</sub> exposure include respiratory health impacts, chronic wheezing and a decline in lung function.<sup>47</sup>
73. The Life After Coal campaign commissioned a report by the Centre for Research on Energy and Clean Air<sup>48</sup> (“**CREA Report**”) to project the expected health impacts, including air pollution related deaths, from unabated SO<sub>2</sub> emissions from the Kusile Units for the period 1 December 2023, to 31 March 2025 based on the high rate of utilisation that Eskom claims that Kusile will be operating on. The CREA Report was utilised in support of the written submission submitted as part of public participation process. It has been updated for purposes of this Appeal and in light of Eskom’s Health Impact Assessment. The CREA Report is attached as “**Annexure A7**”.
74. The CREA report projects the following:

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<sup>44</sup> SO<sub>2</sub> Panel Report at page 8.

<sup>45</sup> SO<sub>2</sub> Report at page 9.

<sup>46</sup> Ibid at page 9.

<sup>47</sup> Ibid.

<sup>48</sup> CREA is an independent research organisation focused on revealing the trends, causes, and health impacts, as well as the solutions to air pollution.

74.1. The bypass would result in an estimated **6-fold increase in SO<sub>2</sub> emissions** from the plant, based on the reported emissions at Kusile, and the reported average sulphur content of the coal.<sup>49</sup>

74.2. The total excess SO<sub>2</sub> emissions resulting from the exemption, compared with normal operation at the same utilisation, would be a projected 280,000 tonnes, while excess mercury emissions would amount to 7,200 kg. This is because the FGD captures toxic mercury from the flue gases as a side benefit. **The excess SO<sub>2</sub> emissions correspond to almost 20 years' worth of emissions from the normal operation of the plant.**<sup>50</sup>

74.2.1. The health impacts would include a projected 930 air pollution-related deaths<sup>51</sup>, whereas operating normally with the FGD operational, the plant would be responsible for an estimated 250 deaths. In other words, the variation of the AEL requested by Eskom would result in a **projected 670 excess deaths from air pollution**, compared with the operation of the plant in accordance with the AEL.

74.2.2. The deaths are attributed to increased **risk of stroke, ischemic heart disease, lung cancer, chronic obstructive pulmonary disease and lower respiratory infections.**<sup>52</sup>

74.2.3. Other excess health impacts in the FGD bypass scenario would include a projected **3000 asthma emergency room visits, 1 400 preterm births, 720 000 days of work absence and 900 years lived with disability due to chronic obstructive pulmonary disease, diabetes and stroke.**<sup>53</sup>

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<sup>49</sup> April 2023 CREA Report at page 2.

<sup>50</sup> Ibid.

<sup>51</sup> (95% confidence interval: 570–1380).

<sup>52</sup> CREA Report at page 2.

<sup>53</sup> Ibid at page 3.

74.2.4. The Report further projects that the societal costs associated with the health impacts would be an estimated **R16.8 billion** (with high and low estimates of R10.3 and R24.4 billion respectively).<sup>54</sup>

Eskom's Health Impact Assessment

75. As mentioned at paragraph 19 above, Eskom commissioned a Health Impact Assessment (“**Eskom HIA**”) in support of its MES postponement application. The Appellants received a copy of Eskom’s HIA on 9 June 2023. The Eskom HIA models current and additional health effect cases in the Kusile study domain in four different scenarios and finds the following:

**Table 1: Current and additional health effect cases in the Kusile study domain.**

Health statistic	Current number of cases	Future (post-repairs)		Temporary scenarios	
		Licence conditions	Average emissions	@ 3 000 SO2	@ 3 500 SO2
Natural mortality all ages	2 404	7	5	10	10
Cardiovascular hospital admissions, all ages	5 273	15	11	21	23
Asthma exacerbation, all ages, as hospital admissions and emergency department visits	699	10	5	37	43
Acute bronchitis symptoms, number of children aged 8 to 12	1 669	18	13	24 - 25	26
Chronic bronchitis incidence, new cases per annum, persons aged 27+	840	4 to 5	3	6	6 to 7
Lung cancer, new cases per annum, persons aged 30+	11	<1 per year	<1 per year	<1 per year	<1 per year
Respiratory mortality - COPD mortality	77	<1 per year	<1 per year	<1 per year	<1 per year
<b>Number of persons exposed (receptor area) in 2023: 402 621</b>					

In relation to the above, the assessment finds that:

*“the largest health burden is shown in the Temporary @3 500 SO2 scenario, but the difference in the numbers of cases calculated in each of the Temporary scenarios is marginal, except in the case of asthma exacerbation. The number of additional cases of persons with exacerbated asthma symptoms is moderately higher in the Temporary @3 500 SO2 scenario vs. the @3 000 SO2 scenario. This finding is as expected, because asthma exacerbation is directly influenced by SO2 concentrations in ambient air, which should logically be higher in the @3 000 SO2 Temporary scenario with higher SO2*

<sup>54</sup> Ibid.

*emissions. Overall, considering the baseline numbers of health effect cases, the numbers of additional cases are in the moderate to practically insignificant range.”<sup>55</sup>*

76. The CREA Report referred to above at paragraph 73, finds some deficiencies which emerge from the Eskom HIA as follows:

76.1. Eskom estimates similar SO<sub>2</sub> emissions (300,000 tonnes), but health impacts which are almost 100 times lower — only 10 human deaths — and they do not consider the impacts of mercury emissions. The sensitivity of human health to SO<sub>2</sub> emissions (i.e. 337,615 tons of SO<sub>2</sub> leading to 928 deaths), adopted in the CREA Report is in much better agreement with multiple previous peer-reviewed studies.<sup>56</sup>

76.2. Eskom concluded that the SO<sub>2</sub> bypass at Kusile Power Station will lead to insignificant impacts on human health. However, the air pollution and health impacts estimated by Eskom are unrealistically low, due to the following:

**76.2.1. The use of outdated methods which underestimate pollution levels:** Eskom uses the CALPUFF air dispersion model to estimate the pollutant concentrations in the atmosphere, but incorrectly applies an old chemical mechanism within the CALPUFF model (RIVAD), which uses outdated SO<sub>2</sub> chemical processes, and therefore estimates extremely low annual mean concentrations of PM<sub>2.5</sub> (0.3-0.8 µg/m<sup>3</sup>).<sup>57</sup>

**76.2.2. The sole consideration of the impacts on local communities:** the air pollution and health impacts on local communities were only considered within a 50 km radius — meaning a small geographic domain — whereas the impacts of emissions from coal-fired power plants can extend up to hundreds of kilometres. Studies have shown that PM<sub>2.5</sub> can persist in the atmosphere for

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<sup>55</sup> Rapid Appraisal Health Impact Assessment (RAHIA) to Assist with the National Minimum Emission Standard Postponement Application for Kusile Power Station Report, No 059-2023 Rev 2.0, WCA van Niekerk PhD QEP(USA) Pr Sci Nat (Environmental Science) MH Fourie PhD MSc Pr Sci Nat (Toxicological Science, 1 June 2023

<sup>56</sup> Updated CREA Report at page 6.

<sup>57</sup> Updated CREA Report at page 7.

up to 1 to 2 weeks and can therefore travel thousands of kilometres in the atmosphere.<sup>58</sup>

**76.2.3. The sole consideration of SO<sub>2</sub> emissions:** the Eskom HIA failed to consider mercury, an extremely potent neurotoxin that persists in the environment for several years (which is also emitted through the burning of coal). Bypassing the FGD dramatically increases mercury emissions. **Allowing Kusile Power Station to operate without FGD increases mercury-related deaths from 283 to 404 and increases the loss of IQ points from 1,894 to 2,706.**<sup>59</sup>

76.3. During the period Eskom is permitted to operate Kusile power Station without these vital air pollution control measures, excess SO<sub>2</sub> emissions will pollute the air, kill humans, and damage the economy.

77. It is clear that the excess SO<sub>2</sub> emissions will have dire effects on human health and both Eskom's HIA and Revised AIR significantly underestimate the impacts. The postponement granted to Eskom is more than likely to sustain the state of poor air quality and NAAQS non-compliance in the HPA and the continued breach of section 24 of the Constitution. If the adverse, and unacceptable, impacts on the environment and public health were duly considered by the NAQO, the only reasonable and rational conclusion would be to dismiss the application as unlawful.
78. Above all, this is a public health issue which must be considered holistically and must aim to prevent the exacerbation of health impacts and deaths, caused by poor air quality. Load shedding, power station malfunction and failures and other energy matters are not the fault of residents and therefore it is unconscionable to put them in this situation of a trade-off between electricity and their health.
79. The NAQO also failed to consider the assertions made by Eskom in the postponement application. Eskom acknowledged that: "*Increased SO<sub>2</sub> and PM<sub>2.5</sub> emissions are associated with health impacts, including respiratory issues, declined lung function, cardiovascular disease, and stroke.*" They also

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<sup>58</sup> Updated CREA Report at page 8.

<sup>59</sup> Updated CREA Report at page 5.

highlighted that Kusile is located in the HPA, and the temporary stacks for which postponement is applied for will increase the emission load in respect of SO<sub>2</sub> and PM<sub>2.5</sub>.<sup>60</sup>

80. The *Deadly Air* case mentioned at paragraph 39 above confirms that the Constitutional right to an environment not harmful to health or wellbeing is a right that is realisable here and now.<sup>61</sup> The High Court judgment acknowledges the health implications of air pollution in the HPA and confirms that “*the enduring and unsafe levels of air pollution in the Highveld Priority Area are an ongoing violation of the section 24(a) Constitutional right of residents. This violation necessarily violates other constitutional rights, including the rights to dignity, life, bodily integrity and the right to have children’s interests considered paramount in every matter concerning the child.*”<sup>62</sup>
81. Therefore, the Appellants highlight the High Court judgment and the declaratory order against the Minister confirming, that air pollution levels in the Highveld are in breach of peoples’ constitutional right to an environment not harmful to health and well-being. In this instance, it is submitted that the NAQO should have considered the unabated emission of excess SO<sub>2</sub>, in light of the health impacts and the inevitable continuation of constitutional rights violation of HPA residents.

*The section 24 rights infringement is not justifiable in terms of section 36 of the Constitution*

82. In its response to the written submission, Eskom argues that this right is justifiably limited in terms of section 36 of the Constitution and states:

*“It is believed that any limitation of Constitution[al] rights associated with a decision in this matter is justifiable in terms of section 24 of the Constitution in that it can be demonstrated that load shedding has resulted in, and will continue to result in, death, injury, disease, damage to property, infrastructure and the environment and significant disruption to the lives of all South Africans.*

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<sup>60</sup> Application Document at page 14.

<sup>61</sup> The judgment can be accessed here: <https://cer.org.za/wp-content/uploads/2022/03/TRUSTEES-JUDGMENT-DATED-18-MARCH-2022-1.pdf>

<sup>62</sup> High Court judgment at para 76.

*Furthermore, it is believed that such limitation falls within the ambit of section 36 of the Constitution, which provides that the rights in the Bill of Rights (including section 24) may be limited in certain circumstances.*

....

*The purpose of the limitation being to protect other constitutional rights impacted by load shedding, including but not limited to freedom of trade, occupation and profession under section 22; health care and food under section 27; and education under section 29."*

A copy of Eskom's response to the written submission is attached as **"Annexure A8"**.

83. The Appellants do not intend to go into detail about this contention made by Eskom save to submit the following:
  - 83.1. Eskom has failed to point to any legislation which constitutes a law of general application that permits levels of ambient air pollution in the HPA that far exceed the National Standards in a manner that poses a direct threat to the health and well-being of residents.
  - 83.2. The AQA and the range of other instruments all have the stated aim of putting in place measures to improve air quality and to prevent conditions of this nature, not to sustain or increase levels of ambient air pollution at levels above the National Standards.
  - 83.3. the principle of sustainable development requires that measures to promote economic development should not sacrifice the environment and human health and well-being.
  - 83.4. this argument reflects a callous disregard for human life, particularly considering the Department's finding that more than 10,000 premature deaths each year are directly attributable to air pollution in the Highveld.<sup>63</sup>
84. This decision is not reasonable and justifiable in an open and democratic society based on human dignity, equality, and freedom. Furthermore, there are less restrictive means to achieve the purpose of reducing load shedding such as

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<sup>63</sup> See Deadly Air case at paragraph 155.

putting processes in place to ensure that renewable energy comes online speedily. Load shedding is a self-created problem that could have been avoided had there not been a delay to move to renewable energy. For instance, a report by Meridien Economics released last year demonstrated how 96% of loadshedding could have been averted had a mere 5GW of additional renewable energy capacity been available for despatch to the grid.<sup>64</sup> The effect of the decision causes unnecessary damage to the fundamental rights of the residents of the HPA.

85. A similar argument relating to section 36 was made in the *Deadly Air* case. This argument was dismissed by the High Court which found that there had been a failure to justify the limitation of the section 24(a) right based on section 36 of the Constitution.<sup>65</sup>
86. In light of the above, the Appellants therefore submit that Eskom has therefore failed to satisfy the requirement in section 36 of the Constitution. The NAQO should have considered the health impacts of air pollution and the ensuing constitutional rights violation.

**iv. The NAQO placed excessive consideration on Eskom's unfounded claims regarding load shedding reduction.**

87. In the Application Document, Eskom alleges that units 1,2 and 3 which are affected by the failure on the West Stack which took place on 23 October 2022, can each provide 700 megawatts ("MW"), in total 2100 MW, to the national grid and "*potentially reduce load shedding by multiple levels*". Eskom further states that it wishes to return these units to the national grid urgently in light of the electricity crisis and the declaration of the energy crisis as a national disaster.<sup>66</sup>
88. Eskom cites the impacts of load shedding as the reason for applying for the postponement of compliance. These impacts include the effect of load shedding on the national economy, job losses, poverty, environmental impacts (in the form of untreated sewage and noise and air pollution caused by small generators)

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<sup>64</sup> [RESOLVING THE POWER CRISIS PART A: INSIGHTS FROM 2021 - SA'S WORST LOAD SHEDDING YEAR SO FAR \(meridianeconomics.co.za\)](https://meridianeconomics.co.za/wp-content/uploads/2021/11/RESOLVING-THE-POWER-CRISIS-PART-A-INSIGHTS-FROM-2021-SA-S-WORST-LOAD-SHEDDING-YEAR-SO-FAR.pdf)

<sup>65</sup> See *Deadly Air* case at paragraph 176.

<sup>66</sup> Eskom Application Document at page 4.

health impacts due to increased reliance on higher risk alternatives such as paraffin or wood, impact on healthcare facilities, supply chain and food shortages and an increased risk of civil unrest.<sup>67</sup>

89. In the MES Decision, the NAQO appears to have placed undue weight on the load shedding reduction claims made by Eskom in its application. Eskom failed to reference any information and or material in its application to validate the veracity of these bold claims. However, the NAQO appears to have been satisfied as these claims seem to have weighed heavily in reaching the decision on the MES postponement application. This is demonstrated by the following statement in the MES decision:

*“I have considered Eskom’s application, atmospheric impacts reports and temporary stacks applications relating to the impacts on health and environment **but balancing this against the negative impacts of electricity supply**, it is determined that the application should be granted.”* (added emphasis)

90. Eskom’s claim that the proposed bypass stacks will reduce load shedding by two stages, or “multiple stages” is highly questionable<sup>68</sup>. This is due to the historical output of Kusile which at the average load factor of 39%, the plant would only produce 39% of its rated capacity or 39 % of 2160 MW = 848 MW as detailed in the sub-section below.

#### Recent Historical output of Kusile

91. The installed (design) capacity of each of the three Kusile units, units 1, 2 and 3, that discharge into the damaged stack is 799 MW (2397 MW total) but according to Eskom the available power that is dispatched to the grid is 2160 MW total or 720 MW each<sup>69</sup>, a reduction of 10%. This is clear from Eskom’s own Integrated Report<sup>70</sup> (Eskom’s MES Application Document claims that each unit can provide 700 MW, for a total of 2100 MW. That is, slightly lower figures.)

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<sup>67</sup> Ibid at pages 17 - 18.

<sup>68</sup> Ibid at page 13.

<sup>69</sup> Eskom Integrated Report 2022, Plant Information Table, p78.

<sup>70</sup> Ibid.

92. If the three units operate at a 100% load factor or performance level for a year (365 days), the expected generation output would be 2160 MW x 365 days x 24 hours/day = 18 921 600 MWh or 18 921,6 GWh per year. This level of performance is highly improbable **since the plant performed very poorly and unreliably prior to the stack failure.**

93. Kusile plant performance prior to the stack failure:<sup>71</sup>

Month	Jul-22	Jun-22	May-22	Apr-22	Mar-22	Feb-22	Jan-22	Dec-21	Nov-21	Oct-21	Sep-21	Aug-21	Weighted average
Energy generated, GWh/day	41,3	30,6	16,9	12,7	13,2	15,4	15,5	11,4	20,7	26,8	23,8	16,1	20,3
Load factor	80%	59%	33%	24%	26%	30%	30%	22%	40%	52%	46%	31%	39%

At the average load factor of 39%, the plant would only produce 39% of its rated capacity or 39 % of 2160 MW = 848 MW.

Note that the plant performance during this year was quite erratic, with a lowest monthly load factor of 22% in December 2021 to a highest value of 80% in July 2022, three months before the stack collapse on 23 October 2022.

94. The above is a clear demonstration that Kusile's performance was low even before the malfunction that occurred in October 2022 and casts questions over the bold claims that the proposed bypass stacks will significantly reduce load shedding. In its response to the written submission, Eskom claims that the issues relating to performance are related to the FGD plant and with the use of the temporary stacks, the FGD plant will be bypassed, and therefore the units are expected to perform better. Eskom further alleges the following:

*"The sub-par performance of the FGD plant has been related to high plant failure rates compared to originally envisioned and, as a result inadequate spares to keep up with the failure rate. The FGD is the only plant of its kind in South Africa, and as it stands, the majority of the spares do not have local representation and have long lead times.*

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<sup>71</sup> Data source: Eskom's AEL monthly reports, <https://www.eskom.co.za/dataportal/>

*Eskom is currently correcting this by entering into a contract with the original equipment manufacturers of the spares in order to improve the delivery times and to improve the high failure rate so that Units 4-6 are not as affected as 1-3.”*

95. In addition, Eskom claims that the Kusile units, even when estimated conservatively to produce 650MW on return to service, will reduce load shedding by two stages, given that each stage of load shedding is 1000 MW.
96. It is unclear what the estimate of 650 MW by Eskom is based on and there is no guarantee that this will be the case. To the Appellants’ knowledge, no information or data supporting Eskom’s claim that the bypass will reduce load shedding was before the NAQO. It appears that the load shedding aspect played a significant role in the NAQO’s decision on the MES Application. The trade-off that should be considered is not the cost of two stages of loadshedding (which the Appellants in any event have good reason to question) and value of the power produced over the 13-month period (recognising that there is a very real risk that the plant may not perform even at the 33% load factor level during this period), but rather the expenditure of the same amount of money on solar photovoltaic (PV) or wind energy, at scales ranging from household and commercial, through subsidies, through to large scale Eskom solar. Eskom can explore ways to fast-track processes related to this such as utilising land it already owns.

v. **The NAQO failed to utilise her legislative authority to impose adequate explicit conditions in granting the postponement.**

97. The above grounds of appeal in relation to the postponement granted to Kusile, provide a sufficient basis to set aside this decision, in terms of the List of Activities and the 2017 Framework. Eskom’s application ought to have been denied in light of the health impacts that increased SO<sub>2</sub> emissions will have on surrounding communities and the resulting constitutional rights violation.
98. However, an additional and compounding ground of appeal is that the NAQO failed to impose adequate explicit conditions on Eskom in her decision granting the postponement. Eskom’s undertakings regarding mitigation are wholly insufficient when due regard is had to what is at stake in this matter. As a result of the NAQO’s decision, Eskom will continue to burden local and all affected

communities with the destructive and deadly health and wellbeing costs of bypassing the FGD in the temporary stacks. These communities have effectively been sacrifice-zones for decades, bearing the brunt of the impacts of a dirty electricity generation system. This decision is essentially fuelling the harmful, false, and unconstitutional narrative that people have no other option but to place electricity above their health and well-being.

99. In this unfortunate circumstance, the Appellants submit that affected communities should at least be provided with a best effort at mitigation of the impacts, albeit that even this would prove inadequate of meaningful justice and redress.
100. The NAQO's decision requires Eskom to submit a detailed plan on the mitigation measures it plans to undertake within 21 days of receipt of the decision "for approval" by the NAQO and the Nkangala District Municipality. It is unclear at this stage what the contents of the said plan will be, furthermore, it is also unclear the factors to be considered by the NAQO and the NDM to determine whether to approve the plan or not. There is no guarantee whatsoever, or safeguards in place to ensure, that the final plan that will be adopted by Eskom will sufficiently mitigate the health impacts of the excessive SO<sub>2</sub> emissions.
101. Paragraph 13(a) of the List of Activities empowers the NAQO to impose conditions in granting an application for a once-off postponement with compliance timeframes with the MES for a new plant as contemplated in paragraph (11A). This provision gives the NAQO a wide discretion on the conditions she can impose in her decision. The NAQO must adhere to the NEMA Principles and legal provisions of the AQA in her decision-making and exercise of designated functions. Therefore, at the very least, the NAQO should have prescribed a basic set of factors as guidelines informing the content of the plan to ensure the effective mitigation of the harm caused by the rights violation resulting from the excess emissions. In this regard, the Appellants make reference to the written submission where they extensive submissions regarding possible mitigation measures.
102. The NAQO ought to have imposed more explicit conditions or prescribed factors and guidelines to minimise the harmful impact of the decision made, especially

in light of the lengthy history of poor air quality, rolling MES postponements and non-compliance by Eskom in the HPA and the burden of the devastating health impacts of air pollution that is borne by the communities in this area.

#### **E. CONCLUSION AND RELIEF SOUGHT**

103. The NAQO's decision granting a postponement of compliance Kusile power station is contrary to, *inter alia*, the amended List of Activities, the 2017 Framework, NEMA, and the Constitution.
104. In light of the aforementioned, the Appellants respectfully request that the Minister grant their appeal and set aside the NAQO's decision.

DATED at JOHANNESBURG on this the 5<sup>th</sup> day of JULY 2023.



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