



# Centre for Environmental Rights

Advancing Environmental Rights in South Africa

**Mr Lucien James**

Environmental Impact Management Services  
P.O Box 2083  
Pinegowrie  
2123  
By email: [kusile@eims.co.za](mailto:kusile@eims.co.za)

Copied to:

**Mr. Bongani Khupe**

Environmental Impact Management Services  
P.O Box 2083  
Pinegowrie  
2123  
By email: [bongani@eims.co.za](mailto:bongani@eims.co.za)

**Bryan McCourt**

Manager: Air Quality Centre of Excellence  
By email: [McCourtBA@eskom.co.za](mailto:McCourtBA@eskom.co.za)

**Honourable Ms. Barbara Creecy**

Minister of Environment, Forestry and Fisheries  
By email: [mndamase@environment.gov.za](mailto:mndamase@environment.gov.za)  
[Fshaik@environment.gov.za](mailto:Fshaik@environment.gov.za)  
[HVanSchalkwyk@dffe.gov.za](mailto:HVanSchalkwyk@dffe.gov.za)  
[Dmakhubele@dffe.gov.za](mailto:Dmakhubele@dffe.gov.za)  
[Omatshediso@dffe.gov.za](mailto:Omatshediso@dffe.gov.za)  
[Vgololo@dffe.gov.za](mailto:Vgololo@dffe.gov.za)

**Ms. Margaret Skosana**

Municipal Manager for Nkangala District Municipality  
By email: [Skosana@nkangalam.gov.za](mailto:Skosana@nkangalam.gov.za)  
[Mmoffice@nkangala.gov.za](mailto:Mmoffice@nkangala.gov.za)

**Dr Patience Gwaze**

National Air Quality Officer  
By email: [pgwaze@dffe.gov.za](mailto:pgwaze@dffe.gov.za)

21 April 2023

Dear Sirs/Mesdames

**PROJECT 1572: ESKOM APPLICATION FOR POSTPONEMENT OF LIMITS IN TERMS OF THE MINIMUM EMISSIONS STANDARDS FOR THE KUSILE POWER STATION**

Cape Town: 1<sup>st</sup> floor, Birkdale 2, River Park, 1 River Lane, Liesbeek Parkway, Mowbray, Cape Town 7700, South Africa  
Johannesburg: The Cottage, 2 Sherwood Road, Forest Town, Johannesburg, 2193, South Africa  
Tel +27 21 447 1647 (Cape Town)  
[www.cer.org.za](http://www.cer.org.za)

## Introduction

1. We address you on behalf of Life After Coal (Impilo Ngaphandle Kwamalahle)<sup>1</sup>, which is a joint campaign by Earthlife Africa Johannesburg (ELA)<sup>2</sup>, groundWork (gW)<sup>3</sup>, and the Centre for Environmental Rights (CER).<sup>4</sup> We aim 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.
2. We hereby submit our comments on Eskom's application for postponement of limits in terms of the minimum emissions standards<sup>5</sup> for the Kusile power station ("the postponement application") concerning the proposed flue gas desulphurization ("FGD") bypass stacks. The comments are based on the application motivation document ("**the Application Document**") published by Environmental Impact Management Services ("**EIMS**"), the annexures thereto, the exemption notification document, the statement by the Department of Forestry, Fisheries and Environment ("**DFFE**") on the procedural exemptions and related information in the public domain. Unless the context indicates otherwise, these comments will also apply to the parallel process in which Eskom applies to the Nkangala District Licensing Authority for a variation of its Atmospheric Emission License ("**AEL**") for Kusile, as described in the Application Document.
3. We acknowledge the current shortage of electricity supply, and the urgent need for additional generation capacity to provide electricity to the grid. However, this context – caused by poor planning, inadequate maintenance and fiscal constraints exacerbated by large-scale corruption - cannot permit administrative action that unjustifiably limit Constitutional rights, or that inappropriately circumvents the risk and impact assessment tools and decision-making processes required by law. This is particularly so when lives are at risk. In this case, the postponement of Kusile's adherence to new plant minimum emissions standards in terms of Sulphur dioxide ("**SO<sub>2</sub>**") emissions will limit the rights of communities and individuals proximate to Kusile to an environment not harmful to health and wellbeing (as set out in section 24 of the Constitution). As such, we need to be clear that we would be imposing on affected parties a sacrifice of life, health and wellbeing and this must be acknowledged in its fullness.
4. This limitation of rights is particularly egregious in light of the judgement and declaratory order made in the matter *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**") which was handed down a mere year ago. The judgment reaffirmed the immediately realisable nature of Section 24 and that failure to adequately control air pollution in the Highveld Priority Area ("**HPA**") is an infringement of that right.
5. It is concerning that Eskom continues to spend money on its ailing coal-fired power stations while cleaner and cheaper energy alternatives are available. We submit that the situation that Eskom now finds itself in is of its own doing, and as we argue below, residents should not have to bear the consequences of Eskom's failures.

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<sup>1</sup> See <https://lifeaftercoal.org.za/>.

<sup>2</sup> Earthlife Africa is a non-profit organisation that seeks to encourage and support individuals, businesses and industries to reduce pollution, minimise waste and protect natural resources. See more information at: <http://earthlife.org.za/description/>.

<sup>3</sup> groundWork is a non-profit environmental justice service and developmental organisation working primarily in Southern Africa in the areas of Climate & Energy Justice, Coal, Environmental Health, Global Green and Healthy Hospitals, and Waste. See more information at: <http://www.groundwork.org.za>.

<sup>4</sup> The CER is a non-profit environmental rights law clinic that helps communities defend their Constitutional right to a healthy environment. Its lawyers help communities and civil society organisations in South Africa realise their Constitutional right to a healthy environment by advocating and litigating for transparency, accountability and environmental justice. See more information at <http://cer.org.za/>.

<sup>5</sup> List of Activities which result in Atmospheric Emissions which have or may have a Significant Detrimental 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 ("**List of Activities**") under the National Environmental Management: Air Quality Act, 2004 (AQA) (with accompanying Minimum Emission Standards (MES)



6. This submission is set out as follows:
  - 6.1. Procedural fairness;
  - 6.2. The cost-benefit analysis and proposition
  - 6.3. Health impacts and Centre for Research on Energy and Clean Air<sup>6</sup> (“CREA”) report;
  - 6.4. Recent historical output of Kusile Power Station;
  - 6.5. Loadshedding claims;
  - 6.6. Current state of Kusile’s air quality
  - 6.7. Eskom’s mitigation measures; and
  - 6.8. Demands.

### **Procedural fairness**

7. On 14 March 2023, the Minister of the DFFE (“the Minister”) granted Eskom an exemption from paragraphs 12(a) and 12(c) of the List of Activities and accompanying Minimum Emission Standards (“MES”)<sup>7</sup> in terms of section 59(1) of the National Environmental Management: Air Quality Act, 2004 (“AQA”) for the Kusile stack postponement application which Eskom intends to submit on 25 April 2023.
8. 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 NEMA and the Environmental Impact Assessment Regulations<sup>8</sup> made under section 24(5) the National Environmental Management Act, 1998 (“NEMA”). The effect of the exemption granted by the Minister is that Eskom is required to conduct a public participation process over a reduced period of 14 days.
9. Whilst we understand that decision-making on energy related matters, insofar as they relate to reducing loadshedding, seeks to streamline processes, any such streamlining must not be allowed to result in the unjustified limitation of Constitutional rights and, further, must not allow for the dispensation of key risk assessment measures as provided for in legislation, including the NEMA and the Air Quality Act.
10. 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>9</sup> Failure to observe and protect these rights renders such decision-making subject to legal review.
11. We submit that a curtailed **public participation** process must be adequate and facilitate a meaningful engagement with the interested and affected parties regardless of the reduced timeframe. The NEMA sets out fundamental principles that must be observed to actions of organs of state which may significantly impact the environment, otherwise known as the “NEMA principles”.<sup>10</sup> Concerning public participation processes, these 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>11</sup>

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<sup>6</sup> See <https://energyandcleanair.org/what-we-do/>

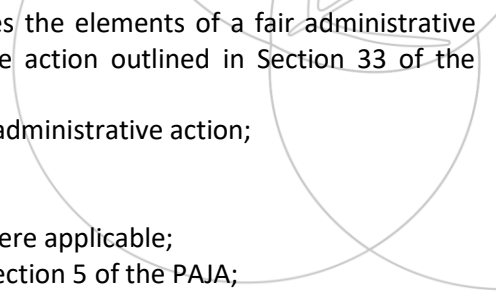
<sup>7</sup> List of Activities which result in Atmospheric Emissions which have or may have a Significant Detrimental Effect on the Environment, including health, social conditions, economic conditions, ecological conditions or cultural heritage, Government Notice 893 (Government Gazette 37054) of 22 November 2013, as amended (“List of Activities”) under the National Environmental Management: Air Quality Act, 2004 (AQA) (with accompanying Minimum Emission Standards (MES)).

<sup>8</sup> Environmental Impact Assessment Regulations, 2014 Published under GN R982 in GG 38282 of 4 December 2014.

<sup>9</sup> S33 of the Constitution.

<sup>10</sup> Section 2 of the NEMA.

<sup>11</sup> Ibid.

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12. The Promotion of Administrative Justice Act, 2000 (“**PAJA**”) outlines the elements of a fair administrative procedure that must give effect to the right to just administrative action outlined in Section 33 of the Constitution, these elements are as follows:
    - 12.1. adequate notice of the nature and purpose of the proposed administrative action;
    - 12.2. a reasonable opportunity to make representations;
    - 12.3. a clear statement of the administrative action;
    - 12.4. adequate notice of any right of review or internal appeal, where applicable;
    - 12.5. adequate notice of the right to request reasons in terms of section 5 of the PAJA;
    - 12.6. an opportunity to obtain assistance or legal representation;
    - 12.7. An opportunity to present and dispute information and arguments; and
    - 12.8. An opportunity to appear in person.<sup>12</sup>
  13. Advancing effective participation is therefore required to inform decision-making in environmental management to achieve the remaining NEMA principles of environmental and social justice.
  14. EIMS indicates that they undertook the following measures:
    - 14.1. Placed notices around community centres with details on the public participation meetings;
    - 14.2. Placed hard copies of the Application Document at Kusile and Kendal Power Stations;
    - 14.3. Placed two adverts about the public participation process in two national newspapers and one advert in a local newspaper; and
    - 14.4. Sent invites and reminders to local councillors.
  15. We record our concerns regarding whether the notification in the affected communities was adequate. For instance, we query whether adequate copies of the Application Document were provided. Furthermore, the venues where the copies of the Application Document were allegedly placed (Kendal and Kusile power stations according to EIMS) are not accessible to affected community members. It is also doubtful whether people from affected communities were properly supported to understand the issues and engage meaningfully in the process. The documentation and the information therein is complex and technical, and it is not easy for people who are unfamiliar with the issues, or whose first language may not be English, to understand the meaning and the impact of the information provided. It has been reported to us that people were not able to access the relevant information prior to the meeting. We invite EIMS and/or Eskom to submit any evidence of the measures they took to ensure that affected communities were equipped and informed to understand the proposal and given an opportunity to raise their concerns.
  16. This process has been characterised by a **lack of transparency and limited access to information**, which has made it incredibly difficult to participate and engage meaningfully as interested and affected parties. On 9 March 2023, upon discovering that Eskom planned to build the proposed FGD bypass stacks, we addressed correspondence to the Minister warning of the grave health impacts of increased emissions and requesting key information, including the estimated volume of the SO<sub>2</sub> emissions released through the proposed bypass stacks and the cost benefit proposition put forward by Eskom for the proposed bypass stacks. We did not receive a response to this letter. A copy of this letter is attached and marked as “**Annexure 1**”.
  17. On 4 April 2022 we addressed correspondence to Eskom expressing our concern on the venues for the public participation meetings and requesting crucial information including details on any mitigation measures by Eskom including health screenings and any modelling done by Eskom comparing pollutant emissions exceedances before and after the construction of the proposed bypass stacks. We also requested, *inter alia*, 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 2**”. On 6 April 2023, we received a response from Eskom stating that “[i]t should be noted that Eskom has seriously considered holding a meeting

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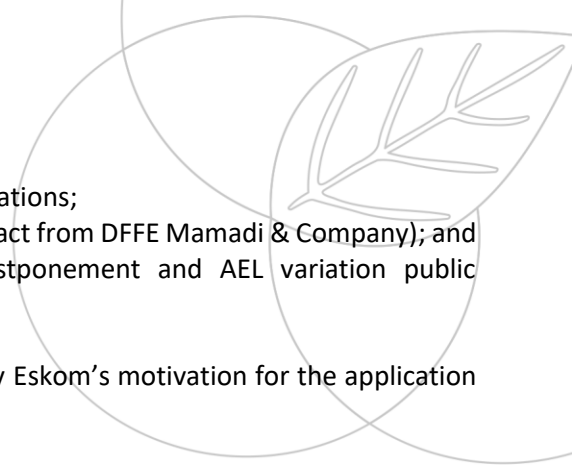
<sup>12</sup> Sections 3(2) and 3(3) of the PAJA.

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.”<sup>13</sup> The letter also stated that more detailed information would be distributed through the public participation process when it becomes available. A copy of this letter is attached and marked as “**Annexure 3**”.

18. The most affected communities are Phola township and Klipfontein Farm. The first public participation took place on 12 April 2023 at Kendal Power Station (“**Kendal**”). Kendal is approximately 20 kilometers away from Phola. It has been reported to us that there is no adequate or reliable public transport available for community members of Phola who had intentions to attend the meeting. Furthermore, transport is often prohibitively expensive for poor affected persons. The second public participation meeting was planned for the same day at eMalahleni Civic Centre in the evening, from 17:00 to 19:00. The chosen time slot also presents challenges with accessing public transport due to the time of day. To our knowledge, this meeting was postponed due to some of these issues. Furthermore, it has been reported to us that only two hard copies of the Application Document were available at this meeting. Therefore, it is apparent that the logistical arrangements of these meetings presented significant access challenges for affected communities and hindered attendance. Furthermore, we are not convinced that adequate steps were taken to support affected communities with sufficient information, understanding, skills and capacity necessary for achieving equitable and effective participation.
19. Below is a summary of our grievances with the public participation meetings:
  - 19.1. that the venues of these meetings were effectively inaccessible to community members. EIMS should have considered venues that are closer to Phola township, bearing in mind that community members may have to use more financial resources to access venues that are located further away from them.
  - 19.2. Notice of the meeting and the involvement of the Local Municipality was inadequate. We invite EIMS to provide evidence of their claim that notices were put up in community centres and evidence of their communication with local councillors.
  - 19.3. 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.
  - 19.4. 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 did have access to transport to the power stations, we submit that 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. We submit that hard copies should have been made available in the communities, giving them an opportunity to peruse them beforehand.
  - 19.5. The information being used to motivate the applications is complex, technical and, to the best of our knowledge, only provided in English. The crisp issues – including that Eskom is planning to bypass SO2 abatement issues and emit high quantities of the pollutant, and the expected health impacts – need to be clearly explained, in all relevant languages, so that the application process can be meaningfully engaged with by affected parties.
  - 19.6. It has been reported to us that EIMS and Eskom will distribute 150 copies of the Application Document at Phola, Middleburg and eMalahleni. We demand that this commitment be fulfilled before the next meeting takes place.
20. We note that the information below has been uploaded on the EIMS website (bearing in mind our submission in paragraph 19.4 above on the accessibility of this information to community members):
  - 20.1. The Application Document and annexures to the application consisting of:
    - 20.1.1. Kusile temporary stack technical information;
    - 20.1.2. Kusile exemption advert;
    - 20.1.3. Draft Kusile AEL variation letter;

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<sup>13</sup> Annexure 3: Eskom Letter to CER at para 3.

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- 20.1.4. Ambient air quality analysis for Eskom Kusile AQM stations;
  - 20.1.5. Analysis of Nkangala District ambient air quality (extract from DFFE Mamadi & Company); and
  - 20.1.6. Press advert providing notice of Kusile MES postponement and AEL variation public participation process.
- 20.2. The Atmospheric Impact Report; and
  - 20.3. Presentations from the public participation meetings, namely Eskom's motivation for the application and the Atmospheric Impact Report.

- 21. We note that on 20 April 2023, and following CER's request for this information at the public participation meetings, EIMS sent an email to interested and affected parties informing them that "no further breakdown of construction time frames are presently available other than to indicate that the temporary stack will be constructed by November/December 2023. The West stack is projected to be repaired by December 2024" and that the date of 25 March 2025 has been used in the MES application seeking postponement of compliance with the new plant MES.
- 22. Public participation must embody the NEMA principles to be inclusive, meaningful and effective, regardless of the curtailed time periods. We are aggrieved by the lack of information in this process and 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, the dissemination and explanation of relevant information, adequate notice of the meetings and the consideration of the accessibility of the venues for these meetings. Based on the above, we 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 this.

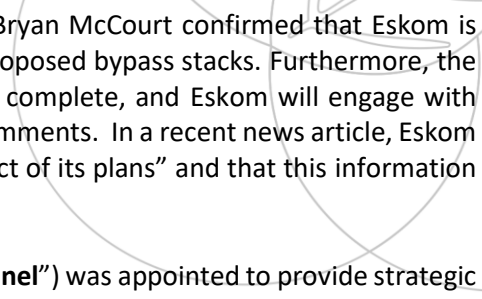
#### **The cost-benefit analysis and proposition**

- 23. We reiterate our request for a copy of any cost-benefit analysis and proposition put forward by Eskom - particularly the value for money proposition, as is required by the Public Finance Management Act, 1999. We note that the Application Document simply states that the construction of the Kusile temporary stacks is "a multi-million-rand exercise".<sup>14</sup>
- 24. During the public participation meeting, we requested Eskom to provide us with the projected costs of constructing the proposed bypass stacks and the costs of the permanent solution to the stack failure. We were informed that a commercial procurement process is currently underway and so this information is unavailable at present. We question the possibility of Eskom embarking on a project of this size and nature without first assessing the projected costs. We also find it inconceivable that Eskom is unable to provide a round figure of the estimated costs at this point in time.
- 25. We urge Eskom to consider the feasibility of alternative energy sources as mentioned in paragraphs 43 to 45 of this submission.
- 26. Interested and affected parties must be provided with the cost benefit analysis and proposition and relevant information and documentation as soon as possible. To the extent that this exists, Eskom is relying on information that it is not sharing with affected parties, and now seeks a decision based on such information. Interested and affected parties have had no opportunity to interrogate this information and obtain expert analysis and input where necessary to put before the decision-makers. We assert that no lawful decision can be made until this information is in the public domain.

#### **Health Impacts (and CREA report)**

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<sup>14</sup> Application Document at Page 5.

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27. On 13 April 2023 during the public participation meeting, Eskom's Bryan McCourt confirmed that Eskom is currently preparing to conduct a health impact assessment on the proposed bypass stacks. Furthermore, the health impact assessment will take several weeks at a minimum to complete, and Eskom will engage with authorities and make the assessment available to stakeholders for comments. In a recent news article, Eskom has also said that it will make "its own evaluation of the health impact of its plans" and that this information will be made available next month.<sup>15</sup>
28. SO<sub>2</sub> has multiple health effects. 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) looks at the health impacts of SO<sub>2</sub> emissions and acknowledges the adverse effects of SO<sub>2</sub>. It 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>16</sup> The SO<sub>2</sub> Report recognises that even in instances when SO<sub>2</sub> levels meet the National Ambient Air Quality Standards<sup>17</sup> ("NAAQS"), there are adverse respiratory health impacts related to SO<sub>2</sub> exposure which occur, especially among children. 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>18</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 wheeze and a decline in lung function.<sup>19</sup>
29. As already mentioned, the lack of information including the absence of a health impact assessment has made it difficult for interested and affected parties to meaningfully engage in this process. As a result, the Life After Coal campaign commissioned a report by the Centre for Research on Energy and Clean Air ("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 is attached and marked as "Annexure 4".
30. The CREA report projects the following:
- 30.1. 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>20</sup>
  - 30.2. 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. The excess SO<sub>2</sub> emissions correspond to almost 20 years' worth of emissions from the normal operation of the plant.<sup>21</sup>
    - 30.2.1. The health impacts would include a projected 930 air pollution-related deaths<sup>22</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.<sup>23</sup>
    - 30.2.2. The deaths are attributed to increased **risk of stroke, ischemic heart disease, lung cancer, chronic obstructive pulmonary disease and lower respiratory infections.**<sup>24</sup>

<sup>15</sup> See article published in Bloomberg on 19 April 2023 <https://www.bloomberg.com/news/articles/2023-04-19/eskom-s-plan-to-bypass-pollution-controls-could-kill-hundreds-study-shows?leadSource=verify%20wall>

<sup>16</sup> SO<sub>2</sub> Panel Report at page 8.

<sup>17</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>18</sup> Ibid at page 9.

<sup>19</sup> Ibid at page at page.

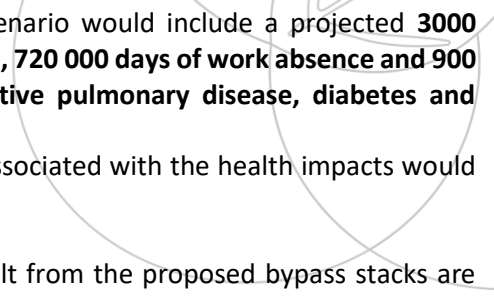
<sup>20</sup> CREA Report at page 2.

<sup>21</sup> Ibid.

<sup>22</sup> (95% confidence interval: 570–1380).

<sup>23</sup> Ibid at page 3.

<sup>24</sup> CREA Report at page 2.

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- 30.2.3. 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>25</sup>
- 30.2.4. The Report further projects that the societal costs associated with the health impacts would be an estimated **R16.8 billion** (R10.3–24.4 billion).<sup>26</sup>
31. As can be seen, the health impacts of the excess SO<sub>2</sub> that will result from the proposed bypass stacks are devastating. We want to also take this opportunity to point out that this process is taking place against a backdrop of long delays and a history of MES non-compliance from Eskom. The conundrum that Kusile finds itself in is of its own making, and communities should not have to pay the price for that. It is unacceptable that people's lives, health and rights are prejudiced on a daily basis in a constitutional democracy where clean energy alternatives are readily available. Eskom should also see this as an opportunity to focus on energy alternatives.
32. It is important to note that the laws and policies which form part of 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, sufficient emphasis must be placed on the detrimental effects of non-compliance with these standards on residents and as a result, the health costs stemming from the issue and their effects on the national fiscus. 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. We emphasise that 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.
33. The *Deadly Air* case confirms that the Constitutional right to an environment not harmful to health or wellbeing is a right that is realisable here and now.<sup>27</sup> The High Court judgment recognises the health implications of air pollution in the Highveld Priority Area and acknowledges 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>28</sup> (Emphasis added)
34. Therefore, we highlight the High Court judgment and the declaratory order against the Minister confirming, and undisputed, that air pollution levels in the Highveld are in breach of peoples' constitutional right to an environment not harmful to health and wellbeing. In this instance, we submit that the unabated emission of excess SO<sub>2</sub>, must be considered in light of the health impacts and the inevitable continuation of constitutional rights violation of HPA residents.

### **Recent Historical output of Kusile**

35. The installed (design) capacity of each of the three Kusile units, units 1, 2 and 3, that discharge into the damaged stack is 799 megawatts (“**MW**”) (2397 MW total) but these units have since been downrated to 2160 MW total or 720 MW each<sup>29</sup>, a downrating factor of 10%. (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>25</sup> Ibid at page 3.

<sup>26</sup> Ibid at page 3.

<sup>27</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>28</sup> High Court judgment at para 76.

<sup>29</sup> Eskom Integrated Report 2022, PLANT INFORMATION table, p78.



36. 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.

37. Kusile plant performance prior to the stack failure<sup>30</sup>

Table 1: Kusile plant generation performance in the year prior to the stack collapse

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%	<b>39%</b>

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.

38. 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. This point is expanded on in further detail below.

### Loadshedding claims

39. In the Application Document, Eskom alleges that the 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 MW, in total 2100 MW, to the national grid and “potentially reduce load shedding by multiple levels”. Eskom further argues that considering the electricity crisis and the declaration of the energy crisis as a national disaster, Eskom wishes to return these units to the national grid urgently.<sup>31</sup>

40. Eskom cites the impact of load shedding as its reasons 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) 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>32</sup>

41. Eskom further alleges that predictions indicate that between November 2023 and March 2024, the availability of the Kusile units due to the temporary stack solution could reduce load-shedding by up to 96 days and reduce the levels of load shedding by “multiple stages on many days”.<sup>33</sup> Furthermore, it is alleged that the operation of the Kusile temporary stacks will “significantly reduce load shedding” and have a notable effect on the economic position of the country and the socio-economic and health conditions of millions of South African citizens.<sup>34</sup>

42. We question the accuracy of the claim that the proposed bypass stacks will reduce load shedding by two stages or “multiple stages”.<sup>35</sup> This is due to the historical output of Kusile which at the average load factor of 39%,

<sup>30</sup> Data source: Eskom’s AEL monthly reports, <https://www.eskom.co.za/dataportal/>

<sup>31</sup> Eskom Application Document at page 5,

<sup>32</sup> Eskom Application Document at page 12.

<sup>33</sup> Ibid at page 14.

<sup>34</sup> Ibid at 14.

<sup>35</sup> Eskom Application Document at page 13.

the plant would only produce 39% of its rated capacity or 39 % of 2160 MW = 848 MW as detailed in the section above.

43. We are of the view that the trade-off that should be considered is not the cost of two stages of loadshedding (which we in any event have good reason to question) and value of the power produced over the 13 month period (recognising that the risk is 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 (which could be done quickly if on Eskom land).
44. We therefore propose that serious consideration be given to using the Kusile malfunction to accelerate the coal phase-out, as well as the roll-out of solar PV and/or wind power generation. We note that Eskom failed to consider alternative energy methods as indicated by the technical alternatives set out in the Application Document.<sup>36</sup> We propose that the state applies the funds it would have spent on building the bypass stacks to invest in initiatives such as a large rooftop Solar PV programme, both residential and industrial, in Mpumalanga.
45. Such a programme would not only take such demand off the grid and therefore reduce loadshedding and would not require major investment in grid expansion but would also reduce energy poverty and outdoor and indoor air pollution, thereby saving lives and health costs. Since rooftop solar installations do not require environmental authorisation, this proposal would also avoid the delay of complex regulatory approvals. We request that a formal and public response to this proposal, as an alternative to Eskom's dangerous, expensive and lengthy proposal, be provided.
46. We and our clients acknowledge and understand the complexity of the situation as well as the impact that load shedding has on the economy and the perpetuation of cycles of poverty. However, bad air quality has a direct effect on human rights and human lives – the deaths of vulnerable people including children and the elderly is simply too high a price to pay for electricity – particularly when feasible, affordable alternatives are available.

#### **Current state of Kusile's air quality**

47. As mentioned above, Eskom was granted an exemption from compliance with paragraphs 12(a) and 12(c) of the List of Activities and accompanying MES in respect of its MES postponement application for Kusile. Paragraph 12(a) requires an application to be accompanied by an Atmospheric Impact Report ("AIR") (as contemplated in Section 30 of the AQA).
48. We note that Eskom has commissioned an AIR, with four emission scenarios, despite the exemption. The main findings of the AIR are noted as follows:
  - 48.1. Three Air Quality Monitoring Stations ("AQMS") are located near Kusile (Chicken Farm, Phola and Kendal 2). Verified 1-hour average data for the period 1 January 2020 to 31 December 2022 was assessed for this study. The Chicken Farm AQMS and the Phola AQMS are located downwind of Kusile (7 km and 15 km respectively). The Kendal 2 AQMS is downwind of the Kendal Power Station (2 km) and approximately 20 km from Kusile.
  - 48.2. Data availability for the pollutants measured was above 80% or very close to 80% for Kendal 2 and the Chicken Farm but was below 80% at times for the Phola station (between 46% and 92% depending on year and pollutant).
  - 48.3. Measured Nitrogen Dioxide ("NO<sub>2</sub>") concentrations were in compliance with the NAAQS for all three years at all three sampling locations.
  - 48.4. Measured SO<sub>2</sub> concentrations were in compliance with the NAAQS for all three years at all three sampling locations, with the exception of daily concentrations in 2020 at the Chicken Farm.

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<sup>36</sup> Eskom Application Document at page 5.

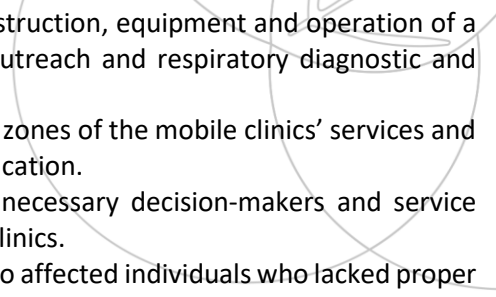
- 48.5. Exceedances of the daily NAAQS for Particulate Matter 10 (“**PM10**”) were recorded at the Chicken Farm AQMS (for the period 2020), Kendal 2 AQMS (2020 to 2022) and Phola AQMS (2020 to 2022). Annual PM10 exceeded the NAAQS at the Kendal 2 and Phola AQMSs.
- 48.6. Measured daily and annual PM2.5 were in compliance with the NAAQS at the Kendal 2 AQMS for the period 2020 to 2022.<sup>37</sup>
49. At this stage, we reserve our rights to respond to the AIR once we have had an opportunity to analyse it fully. We refer you to the proposed mitigation measures on enhanced air quality monitoring set out at paragraph 60 below.

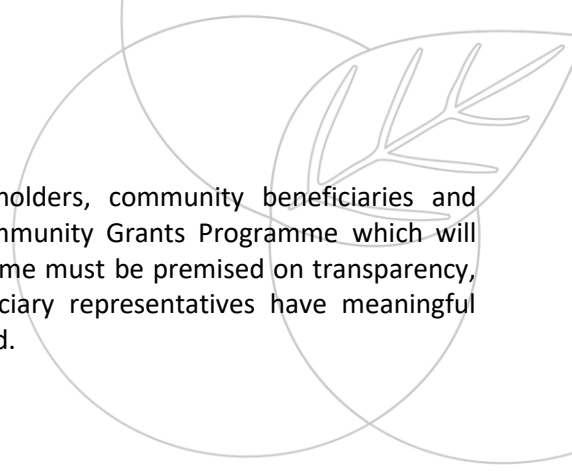
### **Mitigation measures**

50. We refer to Minister Creecy’s conditions in granting the procedural exemption that *“Eskom must undertake measures to mitigate against the exposure of its employees and surrounding communities to harm which, **at a minimum**, must include independent health screenings and referral to appropriate public health facilities for treatment where necessary.”* (Emphasis added)
51. We further note that Eskom, in the Application Document, speaks of mitigation, including undertakings that it will ensure:
- 51.1. Continuous emission monitoring equipment will be installed in each temporary stack to allow for real-time emissions monitoring. Emission data will be reported to the authorities regularly.
  - 51.2. Continued monitoring of ambient air quality in the area around Kusile. And also, that the station also undertakes dust bucket monitoring to assess local fugitive emissions, and this will also continue.
  - 51.3. Compliance with the Minister’s conditions that Eskom must include independent health screenings and referral to appropriate public health facilities for treatment where necessary, and this will be done.
  - 51.4. Eskom will also investigate possible further site-specific interventions in sensitive receptors which experience high emissions levels due to the Kusile temporary stacks operation.
52. We note further that, at the online public hearing on 13 April 2023, Eskom’s Bryan McCourt explained that independent health screenings for employees was a relatively straightforward process, but that the same for surrounding communities was more challenging, and that Eskom is still in the process of developing an implementation plan in this regard which **would be made available for public comment.**
53. We submit that Eskom’s undertakings in regard to mitigation are wholly insufficient when due regard is had to what is at stake in this matter. If the requested postponement and variation are finally granted, Eskom and the applicable decision-makers are burdening 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. The resulting suffering goes beyond what can be captured in statistics and models, and these affected parties should at least be provided with a best effort at mitigation of the impacts, albeit that even this would fall short of meaningful justice and redress.
- In the event that Eskom is successful in its postponement application, it must be required to undertake and implement the steps below in order to make a best effort at mitigation.**
54. Accordingly, Eskom must firstly ensure that a meaningful and effective health impact mitigation programme be devised and instituted in order to counter, at least to some extent, the harmful impacts of the unabated SO2 emissions resulting from the bypass.
55. Such programme must include, as a minimum, the following or equivalent interventions:

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<sup>37</sup> See Atmospheric Impact Report on page iii at [AIR.pdf \(eims.co.za\)](#)

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- 55.1. Causing and funding, or arranging funding for, the design, construction, equipment and operation of a sufficient number of mobile clinics to provide free asthma outreach and respiratory diagnostic and treatment services in target zones.
  - 55.2. Conducting an outreach campaign to advise residents in target zones of the mobile clinics' services and to provide respiratory health prevention and management education.
  - 55.3. Securing formal collaboration from public health and other necessary decision-makers and service providers to support the genesis and operation of the mobile clinics.
  - 55.4. Ensuring targeted critical respiratory-related care and services to affected individuals who lacked proper access to adequate healthcare.
56. Arising from our work in the area around health and air pollution, we know that individuals in the area derive very little adequate healthcare from the public health system. Local clinics are ill equipped to diagnose and treat sufferers of respiratory ailments and community members most often feel left to fend for themselves against harms that they have no control over.
57. The programme must include a register of air pollution related health cases and dedicated liaison with state public health role players must be established.
58. The National Department of Health (NDoH) and academic institutions involved in researching the health impacts of air pollution must be invited to participate in the process of evaluating on an ongoing basis the health impacts of this bypass.
59. The approach to health impact mitigation must be holistic. It cannot be limited purely to the treatment of individuals who are experiencing symptoms of respiratory and pollution-related health ailments. Further health impacts must be prevented and proactive health management for affected communities must be implemented.
60. Secondly, Eskom must implement, or cause to be implemented, enhanced air quality monitoring including:
- 60.1. increased air quality monitoring stations at sensitive receptor sites, communities around Kusile, and areas further downwind. The readings from such stations should be able to be monitored remotely and the information published in real-time and publicly accessible via the internet;
  - 60.2. an effective community alert system during high pollution events and during any exceedance at the plant level;
61. Thirdly, Eskom must ensure that appropriate filtration systems are installed in all community and public buildings in the target areas – including schools, clinics, hospitals, community halls and the like - as follows:
- 61.1. Where such buildings are equipped with heating, ventilating and air conditioning (“**HVAC**”) systems, the filtration should be integrated into the HVAC system; and
  - 61.2. Where there is no HVAC, mobile filtration devices must be supplied and maintained, along with the appropriate training on their use.
62. Eskom must immediately commit financial resources to, and formulate, initial implementation plans for the mitigation measures stated above. Such plans must also be made available to interested and affected parties and consultation thereon must be held, even in the event that the postponement and variation is already authorised, should this come to pass.
63. Furthermore, progress reports and evaluations of these mitigation measures must be publicly made available at three-monthly intervals. In addition, the DFFE and Eskom must regularly report back to the Highveld Priority Area Multi-Stakeholder Reference Group (HPA MSRG) and affected communities on the progress and results of the mitigation measures proposed in this submission.



64. Further, Eskom must formally commit to engaging with stakeholders, community beneficiaries and appropriate state actors to formulate the establishment of a Community Grants Programme which will support, fund and manage ongoing mitigation actions. The programme must be premised on transparency, and the governance thereof must be formulated so that beneficiary representatives have meaningful oversight of the programme, as well as a say in how it is implemented.

### **Demands**

65. We emphasise that the health of people should be a major factor for consideration in any decisions to be made concerning Kusile considering section 24 of the Constitution – which is the basis for the environmental legal framework. Further, other Constitutional rights of residents are also affected – including their rights to life, dignity as well as the rights of children in terms of section 28 of the Constitution.

66. In the *Deadly Air* case the High Court held that the section 24 right to an environment that is not harmful to health and wellbeing is immediately realisable. We reiterate that the quagmire in which Eskom finds itself is almost entirely self-inflicted and residents should not have to bear the brunt of that through the health impacts of excess SO<sub>2</sub> emissions. Because of the already existing MES non-compliance, constitutional rights are being breached in circumstances where Eskom is contributing to a public health crisis, causing billions in health costs and contributing to death and illness. Eskom and the government need to do much more and much faster to deploy clean renewable electricity alternatives to enable these polluting facilities to come offline. We need to see more being done to facilitate a consultative and inclusive just transition.

67. In summary, we demand the following:

67.1. 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.

67.2. In the event that a further public participation meeting will be held in place of the postponed meeting of 12 April 2023, a suitable and accessible venue must be arranged. Furthermore, the Application Document must be disseminated more widely in central areas of the affected communities.

67.3. The NDoH and academic institutions researching the health impacts of air pollution must be part of the evaluation process of the health impacts of the proposed bypass on an ongoing basis.

67.4. Eskom and the DFFE must regularly report to the HPA MSRG on the progress and results of the mitigation measures proposed in this submission.

67.5. Eskom must distribute 150 copies of the Application Document at Phola, Middleburg and eMalahleni as soon as possible.

67.6. We also reiterate our demand for the following information:

67.6.1. The completed Health Impact Assessment, in full, immediately upon its finalisation;

67.6.2. Implementation plan for health screenings; and

67.6.3. Any information or reports indicating the alleged improvement of load shedding through the construction of the proposed FGD bypass stacks.

67.7. In the event that the postponement and the variation are granted, Eskom must implement the mitigation measures suggested, or equivalent or better alternatives, to at least partially ameliorate the harsh costs that communities will bear in terms of health and wellbeing, including:

67.7.1. A comprehensive and holistic health mitigation programme.

67.7.2. Enhanced air quality monitoring.

67.7.3. The installation of appropriate filtration systems in all community and public buildings in the target areas.

67.7.4. A commitment to co-establishing a Community Grant Programme, or equivalent.

68. We make ourselves available for further engagement on the above and any related matters and are happy to provide further information on any aspects of these submissions.

Yours faithfully

**CENTRE FOR ENVIRONMENTAL RIGHTS**

per:

N Maphosa

**Ntombi Maphosa**

**Attorney**

Direct email: nmaphosa@cer.org.za

This submission is endorsed by The Green Connection<sup>38</sup>



**Brandon Abdinor**

**Acting Programme Head:**

**Pollution and Climate Change**

Direct email: babdinor@cer.org.za

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<sup>38</sup> [www.thegreenconnection.org.za](http://www.thegreenconnection.org.za)